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## ORIGINAL ARTICLES.

### A HAIR-CAST OF THE STOMACH; ITS SUCCESSFUL REMOVAL BY LAPAROTOMY.*


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I DESIRE to present for your consideration a case, which, while not unique, is sufficiently rare as probably not to have had its like observed by many present.

Ella M., residing in Oswego, N. Y., aged eleven years, was referred to me in April, 1900, by her physician, Dr. C. A. Sheridan of that city. Both of her parents are living. A maternal grandmother died of consumption. The child had had scarlatina, whooping-cough, and measles. The latter, her last illness, occurred about two years prior to my examination. For fully six months before that sickness, however, she showed evidence of gastric disturbance. She vomited a good deal of frothy mucus, but never at that time any food or blood. The odor of food frequently provoked emesis.

In April, 1899, a swelling was noticed in her abdomen, which at first was said to have been cucumber-shaped. The following summer she began to suffer from colicky pains. These were frequently relieved by friction or after the administration of medicine. She suffered particularly from pain at night, her father being compelled to hold her in his arms. Most of the pain was located to the left of the umbilicus. Her bowels had been constipated for the past year, and moved only with the aid of cathartics. Food disturbed her so that she was compelled to live largely on milk. Upon this diet she gained some in strength and weight. In appearance, however, she seemed scarcely larger than a seven-year-old child. She felt well enough to attend school. She was quite nervous.

Physical examinations showed the presence of a hard, slightly-nodular tumor, quite movable, the lower border being on a line with the umbilicus. The upper extremity could not be defined as the mass reached well up under the ribs on the left side. Internally it arched upward and became conical. Its lower border being rounded and its upper notched, it presented a kidney-shaped appearance. Its long diameter was about six inches. There was quite an area of tympanitic resonance between the tumor and the liver. The urine was examined and found to be straw colored, clear, specific gravity 1022, sharply acid. It contained neither albumin nor sugar; phosphates were normal: microscopically, uric acid and some squamous epithelium were found. She was sent to St. Joseph's Hospital for more careful study. On April 20th a blood-examination was made by Dr. Kieffer. The following was his report: "Count of red blood-corpuscles, 4,880,000 to the c.mm.; leucocytes, 10,300 to the c.mm.; estimation of hemogoblin, 86 per cent.; color index .9. Stained specimen shows decided loss of hemoglobin in all the red blood-corpuscles. These are all of uniform size and shape. The leucocytes are mostly polynuclear. No nucleated reds present."

Under date of May 17th I have summarized in my note-book the condition of the child after her admission into the hospital. The urine had been frequently analyzed during the intervening four weeks, and each time found to be normal. Occasionally her temperature had reached 99° F. and rarely a fraction above, but as a rule it remained normal. The bowels were kept free by administering salines. She had suffered but little from colic, and what pain she had was usually at night. The movements of the bowels were very copious. This was particularly true of the first days of her stay at the hospital. She had not vomited at all during the entire month. She proved to be an exceedingly bright child. There was no apparent change in the shape or position of the mass. Other members of the hospital staff, as well as myself, repeatedly examined her, but we were unable to agree upon a diagnosis, and finally prevailed upon her parents to consent to a laparotomy.

This was performed on the morning of May 17th, 1900. Drs. Elsner, Miller, Larkin, Flaherty, Broad, and Elliot were present. Drs. Heiman and Shipman assisted me. A median incision was made above the umbilicus. Upon opening the abdomen the kidney-shaped mass was found to be within the stomach. A tube was thereupon introduced, and through it this viscus thoroughly irrigated. An incision was carried through the anterior wall of the stomach, parallel with the greater curvature, about three inches in length, the stomach having been previously walled off from the rest of the abdomen by gauze sponges. I was able to force out the conical point and then the rest of the tumor. It proved to be black in color and made up of a mass of hair. Apparently no leakage of stomach-contents occurred. I closed the stomach incision by first suturing its mucous membrane with continued suture, then by interrupted suture the muscular coat, and, finally, with a double tier of interrupted sutures the serous coat. Catgut was the suture material used throughout. The abdomen was flushed with

*Read at the ninety-fifth annual meeting of the Medical Society of the State of New York, held at Albany, January 30, 1901.

salt water, carefully mopped out, and the abdominal incision closed. The child bore the operation well.

After she had recovered from the anesthetic she admitted that from the earliest years of her life she had been in the habit of biting off the ends of her hair which was always worn long enough to be brought to her mouth. At first she thinks she did it simply because she was nervous. But later she rather liked the tickling sensation produced by the hair in its transit to the stomach.

I am in receipt of a letter from her physician, Dr. Sheridan, dated January 24, 1901, namely, seven months after she left the hospital, in which he writes that the little patient "never had any return of gastric trouble; no pain nor vomiting; and in fact has enjoyed the very best of health. She is as fat and rosy a little girl as you would wish to see; has gained 18 pounds in weight, and is 2½ inches taller."

I present to you the hair-tumor removed from our little patient's stomach. It will be observed that in its contour it presents a perfect cast of

FIG. 1. Hair-cast removed from human stomach. Exterior; full size.

She was put upon rectal nutrient enemata for the first week. After this, liquids were administered. During the third week she received first soft and ultimately solid food. Her temperature never reached 100° F. after the operation, and on the third day the pulse, which had ranged above 120, fell to 80, and remained between 80 and 92 until she was well. The abdominal wound healed by first intention. Before she left the hospital we had her hair closely cut.

this organ while in a state of contraction. It is interesting to note that the pyloric prolongation meets the cardiac portion nearly at a right angle, and scarcely can be said to describe a curve. The conical end no doubt passed into the duodenum. If this portion is carefully examined it will be noted that it is much firmer than the body of the mass. No doubt this is due to the contractions of the pyloric sphincter. Another feature is that this extension projects backward, as though it might have been thus

twisted by the gastric contractions or in adjusting itself to the shape of the first inch or two of the duodenum.

The tumor is six inches in its long diameter, while a tape carried from the pyloric tip to the summit of the cardiac extremity measures eleven and three-quarters inches. Its breadth is two and one-half inches, its thickness two and one-quarter inches. Its longitudinal circumference is thirteen inches; its transverse circumference at the point of deepest notching seven and seven-eighths inches. It weighs fifteen ounces. I am able to present a photograph of the exterior of the mass, which is of the exact

FIG. 2. Hair-cast removed from human stomach. Section; not quite full size.

size of the hair-cast. On section it is seen to be made up almost entirely of hair. There is an occasional bit of string. I submit also a photograph of the cross section. It is, however, not full size.

Hair-balls are frequently found in the stomachs of various animals. Dr. Gull[9] describes in an interesting way the habit the angora cat has of swallowing his hair when shedding his coat. I submit for inspection a hair-ball taken from the stomach of a cow, and another from that of a pig. Works on veterinary surgery in referring to this habit speak of animals licking themselves and each other, and, because of the roughened surface of the tongue, gathering up stray hairs which in the end accumulate in the stomach. These masses are called bezoars, or, if composed entirely of hair, trichobezoars. They are apt to become coated with lime salts.

Some very interesting superstitions have been connected with these accumulations. Gresswell in his work on "Diseases of the Ox," states that at one time they were presumed to possess the power of enchantment against the viper and the scorpion, against vertigo, epilepsy, dysentery, inflammation of the lungs, malignant fevers, the plague, leprosy, and many other maladies. I quote these lines from him: "It was put down to the astonishing power of the bezoar that King Edward IV. was strengthened and preserved from the effects of an empoisoned wound; and the same magical influence was supposed to be the real reason why Emperor Charles V. was enabled to free himself from the dreadful thoughts which haunted and disturbed his mind."

The accumulation of hair in the stomach of the herbivorous animal assumes a form which is, strictly speaking, a "hair-ball." Works on veterinary surgery state that for their formation some foreign substance is required as a nucleus, and that the rotary movement of the stomach

during digestion gives to the mass a rounded form and a spiral direction to the hairs. This can be observed in the hair-balls submitted. The movements of the stomach of the carnivorous animal have been recently more thoroughly studied. Dr. Cannon[21] administered different quantities of bismuth with food, and, after giving it to a cat, made a series of X-ray pictures of the stomach while the process of digestion proceeded. It appears that the food is crowded onward from the cardiac to the pyloric end by rapidly recurring peristaltic waves, and that the stomach-contents, when filling this organ, are compressed by its muscular contraction and perfectly molded, to conform with the interior of this organ. And so we must assume that when a foreign substance like hair, incapable of digestion, steadily accumulates and ultimately fills the human stomach, it is similarly acted upon and receives the imprint of the contracted organ. Instead of a "hair-ball," we have therefore a "hair-cast" of the stomach.

I have been able, in reviewing the literature of this subject, to find no less than nineteen authentic cases in which a sufficient quantity of hair had been swallowed by individuals to create within the stomach a hair-tumor. These I have arranged chronologically at the end of this paper.

The first recorded case[1] dates back to 1779. It is the only one in which a male was guilty of this habit. He was a boy, sixteen years of age, who seemed unable to resist the impulse to pull out and swallow his own hair and that of others. Not only was a hair-tumor seventeen centimeters long found in his stomach after death, but enough more hair had been swallowed to form a second tumor, twelve centimeters long, which had lodged in the duodenum. In the report of Dr. Ritchie's case[3] a mass of hair is pictured which conforms to the shape of the stomach. Two other hair-balls, weighing respectively one-half ounce and one ounce and a half, were found in the ileum. These had caused intestinal obstruction, perforation and death. In a third case the coexistence of a gastric and duodenal hair-cast is recorded. This, presented by Mr. Pollock[4] to the Pathological Society of London in 1851, is well illustrated in the volume of transactions of this Society for 1851-52. They were removed after death, from the body of a woman eighteen years of age. That taken from the stomach had a length of six inches, a width of three and three-quarters, and a thickness of two and one-half inches. The duodenal mass extended into the jejunum. It presented a length of fourteen inches, a depth of two and one-half inches, and a thickness of two and one-quarter inches.

Why hair taken into the stomach should cling to its walls can be readily imagined. One would think that it could not be easily gotten beyond this viscus. There is a single instance recorded in which an accumulation of hair became lodged in the small intestines and produced intestinal obstruction. No hair was found in the stomach. This case was recently reported by Dr. G. W. W. Brewster[20] in the *Boston Medical and Surgical Journal*. A sausage-shaped tumor presented itself in the region of the bladder. The patient, a girl of ten, survived the operation of enterotomy for its removal only five hours.

The youngest patient was ten years of age, the oldest, thirty-four. Most of the victims of this habit were in their second decennium. But three were married women. None were insane and but few sufficiently nervous to be described as hysterical.

In nearly every instance the habit of hair-swallowing was of years continuance. Once it had existed thirteen years[15]; in another, fifteen[6]; seventeen years in a third case[7], and twenty-two years in a fourth[5]. During this period the stomach gradually became accustomed to the presence of the foreign body, and tolerated it in many instances without the slightest rebellion. One of the largest masses discovered, which weighed four pounds and seven ounces, was reported by Russell[7]. To use his own words: "I may also repeat the statement that the history of the patient did not present any evidence of difficulty in digesting food." One still larger was successfully removed by operation[14]. Its weight was five pounds and three ounces. There are others weighing more than the specimen which I present.

In animals it is not unusual to find a number of hair-tumors at the same time in the stomach. One writer speaks of as many as nine. In but a single case[7] do I find the presence of two recorded as coexisting in the human stomach. These were so molded to each other that together they formed a perfect cast of the stomach. As to form, nearly all present the same picture. With but a single exception they had a pyloric prolongation extending into the duodenum. This case is reported with illustrations by Schoenborn[10] in Langenbeck's Archiv. One case presented an esophageal spur[6]. In Bollinger's case[18] the duodenal projection was fourteen centimeters long and five centimeters thick.

Of the nineteen cases, ten were discovered postmortem, and nine upon the operating-table. It is very surprising that in every instance the discovery of the hair-cast was unexpected. In not a single case had a correct diagnosis been made. And what is still more remarkable, no physician or surgeon had ever surmised that he had to deal with a foreign body in the stomach. Perhaps we should except Stelzner[17] who knowing of Schoenborn's case, suspected that this might be the condition. As a rule the diagnosis was splenic or omental tumor, movable kidney, or fecal or other impaction in the transverse colon. Two of the patients were pregnant. In each of these the vomiting was most intense. In one there was such severe hematemesis that the physician reporting the case was called in consultation to arrest the gastric hemorrhage[7].

The patient's condition was so extreme that she died of collapse on the following day, having in the meantime aborted. In the other case[9] death from perforative peritonitis followed the delivery of a seven-months child. In a few instances vomiting frequently occurred after meals, this having kept up for several years. Occasionally the patient would vomit several times in one day and then not again for several days. Nor was it always food which was ejected. In some instances it was glairy mucus, which would occasionally be streaked with blood. The appetite was variable. In one case[9] hot foods caused pain and vomiting, while cold food could be easily retained. In some instances there was no pain until, as a result of perforation of duodenum or stomach, peritonitis occurred. Others had occasional pains after eating.

In only one instance[10] do I find the peculiarity referred to in my own case, namely, the regular recurrence of severe pain at night and while the patient was in a recumbent posture. This certainly is a manifestation which one should not have with movable kidney, splenic or other tumor. The bowels acted irregularly; more often than not the stools were liquid. In at least one case there was alternating diarrhea and constipation[16]. In a few there was suppression of menstruation. The general condition of the patient was sometimes not much altered. In other cases there were marked emaciation, anemia, or as occurred in my own patient, a condition of immaturity, for, as will be recalled, though eleven years of age she appeared to be scarcely more than seven.

Almost without exception the discovery that the patient had been a hair-eater was not made until the tumor was found. As a rule the hair had been simply bitten off from braids or flowing locks, but in other instances hairs of great length were found. One woman[7] is said to have pulled the hair out of the back of her head whenever she became nervous, rolling it up into a ball and swallowing it, while another deliberately swallowed her combings night and morning[6]. In a single instance the hair came from a foreign source; Schultén's patient—a weaver of cow's hair into shoes—frequently, while at work, carried her hair-covered finger to her mouth.

The physical signs as stated were always incorrectly interpreted. In most instances the tumor occupied the position in the epigastrium described in my own case. It was difficult or impossible to reach the upper border of the mass because of its concealment behind the lower ribs on the left side. In the case of Russell[7], the large tumor so displaced the stomach that it assumed a nearly vertical position, and the pylorus was made to occupy a site in the pelvis. The tumor was always movable, rarely sensitive, although occasionally tenderness was noted. The convex lower surface, the concavity above, gave the mass a striking resemblance to a kidney. Schoenborn and Naunyn[10] studied their case very closely. They introduced a tube into the stomach and inflated this organ. As the viscus became distended the anterior wall of the stomach was elevated and the mass was made to occupy a deeper position. They were both quite convinced therefore that the tumor was a misplaced kidney.

In nearly every fatal case death resulted from perforative peritonitis. In some cases the mucous membrane and muscular coat of the stomach were found greatly thickened. The perforating ulcer had no fixed location. It was found situated in various parts of the stomach, and in at least one case was in the duodenum[9].

While it must be admitted that in the nine operated cases the surgical procedure was intended to be only an exploratory one, or was performed with the expectation of finding other conditions, it is a matter of great gratification that in every instance the patient made an uninterrupted recovery. Not a single death attended the operation.

The first reported case in which laparotomy was successful was by Schoenborn in 1883[10]. Soon thereafter (1884) Thornton[11]* operated upon his patient. The other gastrotomies were performed by Berg[12], Swain[14], M. W. af Schultén[15], Allen[16], Stelzner[17], Schopf[18], and myself[19]. With the exception of Schopf[18] each operator removed the mass entire. In most instances silk was used as suture material. In all cases total disappearance of symptoms occurred after recovery from operation.

*Addendum.*—Soon after I read this paper at the meeting of the Medical Society of the State of New York, Dr. Wm. Finder of Troy called my attention to a specimen presented by himself to the New York State Medical Association at its annual meeting in 1886 and which he informs me is now in the Museum of the College of Physicians and Surgeons of New York. There were two masses, together weighing sixteen ounces and composed of human and horse's hair, sewing-thread, grasses, and plant fiber. These were removed postmortem from the stomach of a young woman in March, 1886, who was supposed to have died of malignant disease of the stomach.

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* I have searched in vain for a record of the operation Homans[12] states Thornton performed in 1866. As Thornton in the report of his case[11] mentions the fact that Homans witnessed this operation in 1884, it seems probable that the date given is simply a typographical error.

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## SCURVY AND RICKETS IN YOUNG CHILDREN.

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IT has only been within the last decade that the possibility of scurvy occurring in young children has been generally recognized by the profession. Prior to that time we were wont to consider that scorbutus was a disease which was prone to attack seamen placed under unfavorable dietetic conditions, and scarcely to think of the possibility of its occurring in persons living on shore and obtaining a varied diet. Still less did it occur to us that some obscure manifestations of diseases in nursing infants might be due to this cause. During the past decade, however, evidence has been present in considerable amount which shows very clearly that scurvy is by no means a very rare affection in early life, and that it often manifests itself in such a way as to lead the physician to make a very erroneous diagnosis when the patient is first brought to him.

Perhaps the most frequent error in diagnosis under these circumstances is that the child is suffering from muscular or articular rheumatism; this decision being reached by reason of the fact that the child seems to suffer great pain upon movement, and sometimes has a small degree of fever. The pain on motion is so excessive in many cases as to seem almost agonizing; and it is by no means uncommon for parents to permit children to become excessively unclean because the movements necessary in bathing cause such manifestations of pain that it seems a greater kindness to permit the child to become filthy than to move it about. As a matter of fact, acute articular rheumatism in young children is a very uncommon disease, certainly while they are still nurslings, and particularly is this true of most portions of the United States where rheumatic fever is by no means as common as it is in England and perhaps some other portions of the Old World. While it is true that acute articular rheumatism frequently attacks children in the second decade of life, it is equally true that it is rare, as we have just stated, in the first five years of existence.

The characteristic symptoms of scurvy in a young child, when they are well developed, are so pathognomonic that it is difficult to see how an error in diagnosis can be made if the physician is acquainted with the possibility of the occurrence of this disease. Like all diseases, however, instances are met with in which many of the characteristic symptoms are entirely absent, and it is not uncommon for the painful manifestations that we have spoken of to be the only evidence of the malady. In still others, we find a peculiar spongy state of the gums, which tend to bleed when lightly touched and which are frequently so swollen that teeth which have recently broken through the gum are speedily covered in by the overgrowth of the mucous membrane, the edges of which, about the teeth, frequently look as if they were composed of tiny blebs of blood of a dark color. The other symptom of scurvy, which is by no means as constant and yet which is equally characteristic, when it occurs, is the development of petechiæ in different portions of the body, very frequently about the ankles and feet. In still other cases, subperiosteal hematoma develops with surprising rapidity, and, as pain on movement and the development of great swelling are frequently first noticed after a fall or a blow, it not rarely occurs that the physician is led into the belief that traumatism is the cause of the illness, without recognizing the fact that it has played but a small part in causing the sudden development of a state which really indicates grave systemic conditions. It is true that these subperiosteal hematomata have been chiefly reported by French clinicians, and have been rarely seen in this country, whereas, on the other hand, considerable extravasations of bloody serum have been met with in the loose tissues after exposure to injuries which in the healthy infant would produce no symptoms whatever. Particular attention has recently been called to these cases of scurvy simulating rheumatism by Griffith, of Philadelphia, in a paper which he read before the County Medical Society.

The peculiar characteristics of scurvy in infants are the very grave appearance of the child when suffering from the disease in its severe forms, the rapidity with which it improves under proper treatment, and the rarity with which death occurs as the direct result of the malady, since a fatality is usually produced by some intercurrent disease which speedily saps the vitality of a child whose vital resistance is already so impaired.

The following cases illustrate three types of this condition which have come under my observation: The first occurred some years before scurvy was recognized as a common disease in early infancy and was that of a child, about a year old, who cried bitterly every time it was moved, particularly if the movement in any way involved a change in the position of its back. Indeed, the back symptoms were so marked that the father of the child, a physician, called me to see it in order to determine whether it was suffering from spinal disease, and I, in turn, asked for the opinion of a well-known orthopedic surgeon, who stated that spinal disease was present, and who prescribed a line of mechanical treatment which chiefly consisted in fixation of the spine and abso-

lute immobility of the body as far as possible, with the object of avoiding pain and lessening irritation. After this treatment had been kept up for a considerable period of time without any benefit taking place, except that the child had been free from the suffering incident to the frequent moving of its body, it occurred to me that this might be a case of infantile scurvy, and in following out this idea it was promptly treated for this condition, with an amelioration and final cure of its symptoms which were extraordinary in their rapidity.

Another case was that of a child in the northern part of Philadelphia, seen in consultation with a well-known practitioner, who gave me a history that three other children of the family had died in early infancy with symptoms which had been variously described as meningitis, cerebrospinal meningitis and "spinal trouble." The parents were much alarmed because they thought that the present infant was manifesting the same symptoms which had carried off the other children. This child screamed incessantly, night and day, and nothing seemed to comfort it. The more it was nursed and coddled, the more its parents tossed it up and down and walked with it, the louder became the cries of the child; yet its crying was so incessant when it was laid in its crib or upon a bed that the members of the family took turns in keeping it in their arms, day and night, until all of the adults of the family were exhausted, and the child also seemed to be on the verge of collapse. Careful examination of this child revealed the fact that its gums were slightly spongy, and as no evidences of disease in its spine or joints or head could be demonstrated, the diagnosis of probable scurvy was made, and proper treatment again resulted in a very extraordinary rapidity of cure, the pain ceasing and the child becoming quiet and sleeping naturally under a proper dietetic arrangement when the use of bromides and other sedatives in ordinary doses had failed to produce any marked change for the better, even of a temporary character.

The third case was that of a child of wealthy parents who suffered at the end of its first year of life with almost complete paraplegia. It was plump but pallid, and its gums and mouth presented the characteristic scorbutic symptoms already named, so that in this instance the diagnosis was by no means difficult. The possibility of scurvy had not been thought of, as the child was supposed to be fed on the best cow's milk that money could buy, with the addition of a well-known form of artificial infant's food. Here again the introduction of proper dietetic regimen resulted in an equally speedy cure with total disappearance of the paraplegic symptoms and a recovery of power in the lower extremities which was remarkable. No one who had not had experience with such cases would have believed that so much loss of power could be so soon followed by its complete reinstatement.

I wish to conclude this brief paper by pointing out a feature of this disease which has seemed to me to be quite constant, namely, that scorbutus in infancy is distinctly a disease of the children of the well-to-do in distinction from rickets which, on the other hand, seems to be a disease of the poor. Clinical experience, I think, indicates that scorbutic cases are rarely brought to hospital dispensaries while rachitic cases are constantly seen. On the other hand, scorbutic cases are not uncommonly met with in private practice. This clinical fact seems to carry out certain theories which have been advanced in regard to rickets in a way which is interesting. It is not many years since every one believed that rickets was due to a deficient quantity of bone-forming material in the food of the child, but since that time other clinicians have stated their belief that more commonly it depends upon inability of the child to assimilate and utilize the ingredients in its food which it needs for proper bone growth. Or, in other words, the fault lies not with the food but with the child. Amongst the poor this inability is probably due to unhealthy surroundings and a general lack of sanitation which interferes with development. On the other hand, such influences are not at work among the children of the well-to-do, but these children often receive, for long periods of time, the various artificial foods which, in many instances, they are incapable of digesting, and not only this, but no change is made in their diet for months, either in the quantity of the various ingredients which it contains, or in their quality. These children, therefore, suffer from the nutritive changes which come on as a result of a limited and fixed diet with no variation; whereas, the children of the poor, who often have too great a variation in their diet, rarely present scorbutic symptoms and often do manifest distinct rachitic symptoms.

It is known that not rarely cases of laryngeal spasm or cough depend upon either rickets or scorbutus, probably most commonly, the former, though in one or two instances excessive laryngeal irritation has been met with by me in children who were distinctly scorbutic. It would be well if physicians in the presence of obscure cases occurring in early childhood would remember the possibility of either one of these affections being the underlying cause for the manifestations of disease and thoroughly investigate the question of diet before administering remedies, such as the salicylates for rheumatism, iron for the blood, or bromides for nervous irritation. It seems hardly necessary to add that, when artificial foods have been largely employed and scurvy has developed, they should be cut out of the diet list; that natural food should be largely introduced; that orange-juice should be freely given, and that beef-juice should, for a time at least, form an important part of the child's food. It is quite extraordinary in some cases to note the almost instinctive avidity with which little babies, too young to have any real desire for a particular kind of food, will seize upon a spoonful of beef-juice and apparently enjoy its taste, as if appreciating the value of this fluid to the economy.

## THE RELATION OF TUBERCULOSIS TO THE TENEMENT-HOUSE PROBLEM.[1]

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IN view of the fact that tuberculosis, although not by any means confined to the tenements, finds its chief centers of infection and makes its greatest ravages in these districts, the Tenement-House Commission, appointed to examine into the conditions of life of the poor in New York State, has undoubtedly shown a true appreciation of its important duties in deciding to devote its first public hearing in this city to a discussion of the momentous question, The Relation of Tuberculosis to the Tenement-House Problem.

When it is considered, however, that, according to the statistics of the Department of Health, between eight and nine thousand deaths from pulmonary tuberculosis are annually reported in the Greater City of New York—I say *reported* advisedly, for the actual number of deaths from this cause probably far exceeds the figures given—and when it is estimated that at least four times this number of persons at present suffering from phthisis in a more or less advanced stage of the disease are now living in the city, perhaps three-fourths of which, or in the neighborhood of twenty thousand, are to be found in the tenement-house districts, the immense magnitude and difficulty of dealing with this problem may be readily realized.

It has been suggested, as the best and only radical solution of the problem, that public hospitals and sanitoria should be established for the isolation and treatment of the consumptive poor; but as useful and necessary—nay, urgently needed—as such institutions are, as an adjunct to the methods to be adopted, it is manifestly impossible to care for the vast multitude of tuberculous individuals in this way. We must, therefore, depend chiefly upon other and more general means for the restriction of tuberculosis, if we can ever hope to prevent it and finally drive it from our midst. We must continue to improve the general health of our cities by judicious sanitary measures, we must better the condition of the poor by the erection of suitable tenement-houses and by gradually educating the people in the ordinary laws of hygiene, so that they may be able to take better care of themselves and their families; and above all we must warn the public of the dangers of contracting consumption, how to prevent it and avoid communicating the infection to others.

Tuberculosis, as is now generally known, is caused by the tubercle bacillus, a specific germ, without which the disease cannot be produced. But it is important to bear in mind, not only with regard to consumption but all other bacterial diseases, that the mere presence of the microscopic organism in the body does not cause disease when the conditions in which the germ can grow and develop its poison are absent; it is only when the conditions favorable to its growth exist that it becomes a harmful invader. Thus, although the bacillus tuberculosis is the essential cause of this infectious disease, there are various other contributing causes which influence the production of tuberculosis, and unless these causes are at work, weakening and exhausting the vital functions, the tubercle bacillus, when present, meeting with a sterile soil and the natural resistance of the body in health to all disease, although otherwise a most destructive and insatiable tissue-consumer, soon dies of inanition, or, at any rate, remains quiescent and harmless.

It is to the unfortunate existence of unhygienic conditions, which favor the growth and development of this ubiquitous bacillus in the habitations of the poor, that the prevalence of tuberculosis in the tenement-house districts is due. One of the most potent factors in the production of consumption, especially in the tenements, is overcrowding and consequent foulness of the air. "The respiration of impure air," says one great authority on tuberculosis, "directly debilitates the vital powers, enfeebles the nervous system, depresses the appetite, deranges the secretions and leads to the retention of effete matter in the blood." It has been repeatedly observed that previously-inhaled air is one of the main causes in the production of phthisis. "With the fear of bacilli and contagion before his eyes," says another well-known authority, "neither the patient nor his attendant will hesitate to ventilate sufficiently, and constantly renew the air breathed. *Free extreme ventilation is the most important means of preventing and also of treating pulmonary consumption.*"

I might, if space allowed, quote many striking examples of the influence of deficient ventilation in predisposing to consumption. This influence is most marked in prisons, asylums, workshops and similar places, where vitiated air is breathed continuously, and where other injurious influences are also usually at work. It commonly means that the sufferer follows a sedentary occupation and works in a constrained position, or is confined indoors amid depressing surroundings. In addition he may be underfed, and it is a well-known fact that bad air leads to intemperance; poor food and drunkenness have a special influence in rendering people susceptible to consumption.

The effects of overcrowding are well exemplified in densely populated cities. Lagneau has shown, from statistics collected from 662 cities in France, that the denser the population the greater is the number of deaths from tuberculosis. Thus, while the death-rate per 1000 of the population from this cause in cities of 5000 inhabitants was 1.81, in cities of 10,000 inhabitants it was 2.16; in cities of 20,000 inhabitants it was 2.71; in cities of 30,000 inhabitants it was 2.88; in cities of 100,000 inhabitants it was 3.05; in cities of 450,000 it was 3.63; and in Paris, with upward of three million inhabitants, the death-rate per 1000 of the population rose to 4.90. From the Report of the

[1] A paper presented to the Tenement-House Commission at its meeting in New York City, November 16, 1900.

Health of Towns Commission for Great Britain it appears that the ratio of phthisis and other similar diseases in Dundee, Scotland, increases with the overcrowding in dwellings. Taking the ratio of dwellings of four rooms and upward as 10, it was found that the other ratios were: For three rooms, 17; for two rooms, 20; and for one room, 23. The same thing has been observed in London. According to the Annual Report of the Medical Officer of Health in London, 1898, in districts with under 10 per cent. of overcrowding (overcrowding being taken to mean where more than two persons occupied a room in tenements of less than five rooms) the death-rate per 1000 from tuberculosis is 1.10; in districts with under 15 per cent. overcrowding it is 1.43; in districts with under 20 per cent. overcrowding it is 1.61; in districts with under 25 per cent. overcrowding it is 1.80; in districts with under 30 per cent. overcrowding it is 2.07; in districts with under 35 per cent. overcrowding it is 2.42, and in districts with over 35 per cent. overcrowding the death-rate per 1000 from consumption is 2.63. Similar observations conducted for the four years previous to 1898 showed the same obvious relation between the amount of overcrowding and the phthisis death-rate.

It has also been repeatedly observed that some houses in these overcrowded districts after a time seem to become permanently infected with tuberculosis, as evidenced by a repetition of cases of the disease. There can be but little doubt that in many instances such a "family house" is a far more important factor in the production of consumption than any supposed "family predisposition," these houses becoming infected through the poisonous discharges of previous tuberculous inmates. It is easy to understand how the permanent infection of premises may occur when one considers that the sputum of consumptives, which frequently contains a countless number of virulent tubercle bacilli, is often carelessly expectorated on the floor and elsewhere in dwellings, where it dries and is converted into dust, thus getting into cracks in the woodwork, in the papering, etc., whence it is later inhaled into the lungs by others. Such tuberculous dust has been found by experiment to remain virulent and infectious for months and even years after it was deposited in rooms which were not thoroughly disinfected and renovated; and where this dust is allowed to accumulate for a length of time it may be impossible to disinfect and renovate the premises without practically rebuilding them. These premises then become permanently infected.

From an investigation made by the writer in 1897, from the maps and records of the Department of Health, into the distribution of tuberculosis in New York City, it was found that in two wards of the city (Wards IV and VI) 38 per cent. of the total number of dwellings had cases (including deaths) of consumption reported from them during the years 1894, 1895 and 1896. Of these cases one-half occurred in 23 per cent. of the affected houses, this being but 9 per cent. of all the dwellings in the wards. One-fourth of the houses had apparently become permanently infected, as shown by a repetition of three or more cases of consumption in them in the three years, while certain very bad houses had eight or more cases repeated in them. During a period of eight years previous to 1897, according to the records, 136 cases of pulmonary tuberculosis (including deaths) were reported from twelve houses, or an average of 11⅓ cases per house. And these were only the reported cases and deaths, which, as we know, represents but two-thirds to one-half of the actual number of cases which probably occurred in these houses. It may be safely estimated, therefore, that 200 or more cases of consumption, or an average of about 20 per house, had occurred in these twelve houses in eight years—a truly startling exhibition.

These two wards were selected for study because they contained a large number of tenement-houses in one of the most overcrowded parts of the city, and because they illustrated most forcibly the effects of overcrowding and consequent foulness of air. The greatest prevalence of the disease was found in those tenements in which the sanitary provisions were most deficient, especially in rear houses and old, dilapidated buildings, where lack of ventilation and light and the presence of ignorance, poverty and filth furnished the most favorable conditions for the growth of all bacteria, and especially of the tubercle bacillus. These conditions have since been partially removed by action of the Department of Health and some of the most unsanitary houses were condemned and torn down in 1896; but many other equally-infected tenements in these and other parts of the city are still standing, some of them having shown an increased repetition of cases—a menace to the health of the community—despite all possible efforts toward disinfection, renovation, etc., on the part of the sanitary authorities.

Analogous investigations have also been made by others in this country and abroad with the same result. Dr. Ransome found in Manchester, England, that tuberculosis was distinctly more prevalent in certain houses than in others. The closed courts and alleys, the shut-in or blocked-up houses, and, above all, the houses built back to back, with no through ventilation, and with bad light, were the most affected. In some instances, within five or six years, double or treble occurrences of the disease had taken place in the same house, and some houses not only showed a repetition of cases, but patients who had improved on being taken to hospital had a recurrence of severe tuberculous symptoms when they returned home, and had to be sent to hospital again. Dr. Tracy, Registrar for the City of New York, has also studied the distribution of tuberculosis throughout the entire city, from the record of deaths during the five years, 1888-1892; and Dr. Flick has done the same for one ward in Philadelphia for twenty-five years previous to 1888. The conclusions arrived at by these competent observers tally exactly with those reached by the writer, *viz.*, that

tuberculosis is not uniformly diffused throughout a community, not even in those localities where the disease is most prevalent, but is confined within narrow limits, as in certain streets and within the walls of certain houses.

That this effect is largely the result of deficient ventilation and lack of pure air and light there can be no doubt, although, of course, other conditions to be found in the tenement-house districts also take part in the production of the disease. As to the effect of light, there is abundant evidence to show that daylight, especially direct sunlight, exercises a beneficial influence in maintaining the general standard of health; and that darkness and damp tend to produce disease. It has been proved by numerous experiments that light is inimical to and under favorable circumstances may wholly prevent the development of bacteria and disease-producing organisms. The tubercle bacillus when exposed to direct sunlight is killed in from a few minutes to several hours, depending on the thickness of the layer and the season of the year; and when placed in diffuse daylight, as near a window, it is destroyed in from five to seven days. No dark or damp dwelling is fit for human habitation, and those who live in such places are seen to grow pale, sicken and die, like plants that are kept in a cellar.

There is an Italian saying to the effect that where the sun does not enter the doctor does, and the Indians have a proverb which says that he who plants a tree in front of his house begins to dig his own grave. The value of sunlight in the treatment of consumption, especially in its early stages, has long been recognized by practical physicians, and the method which has been most successful in curing the disease, and which is now practised generally in sanatoria for consumptives, consists chiefly in a plentiful supply of sunlight and fresh air, together, of course, with the necessary rest, proper food, medical and hygienic treatment, patients when suffering from tuberculosis being placed on a terrace in the open air or in a balcony sheltered from cold winds, but exposed for many hours during the day to the full direct rays of the sun.

Another no less important predisposing cause of phthisis is habit of life and occupation. It has been observed that those who follow an outdoor life under normal healthy conditions are comparatively free from the disease, while those who lead sedentary lives, habitually indoors, are very subject to consumption, the maximum incidence of this affection being found among persons who constantly inhale impure air in badly-ventilated rooms and in occupations associated with a dusty atmosphere. Thus stone-cutters, knife-grinders, potters, plasterers, dyers, wood-carvers, cigar-makers, polishers and the like suffer particularly from phthisis. Printers, compositors, tailors, dressmakers, bakers and all those who work in a constrained position in poorly-ventilated, poorly-lighted or damp places, or where smoke and various irritating gases are generated also readily contract the disease. And how many of our tenement-house dwellers do we find working at such occupations under bad hygienic conditions!

But admitting that these evils, and others conducive to tuberculosis, exist in the tenement-house districts, what can be done to ameliorate or remove them? The problem is unquestionably a difficult one—probably the gravest and most difficult of the day, and as such it is worthy of the consideration of all thoughtful men—but, although it may take a long time and the expenditure of much money to solve it, I do not think that it is hopeless of solution.

Apart from the erection of public hospitals and sanatoria for the care and treatment of the consumptive poor, which we need not consider here, much might be done in the way of legislative enactments regulating the width of the streets of cities, the construction and height of the houses, and, above all, the preservation of parks or open spaces. The establishment of public washhouses would have a very beneficial effect in minimizing the frequency with which washing and drying of clothes is carried on in small rooms. In the same way, the evils resulting from working at home at sedentary occupations in ill-ventilated apartments might to some extent be obviated by the establishment of public workrooms, where, on payment of a small fee, tailoring, shoemaking and other similar employments might be followed; and it would be well if all such deleterious home-work were prohibited. The erection of model tenement-houses, constructed on true hygienic principles, by generous and liberal-minded private individuals, is a noble and far-reaching charity and is much to be commended; and could municipalities undertake such a work it would prove to be an investment which, both directly and indirectly, would return a handsome interest. The building of cottage homes on the outskirts of cities, together with cheap rapid transit facilities, for re-housing the working classes on the destruction of unsanitary tenements in the congested districts, is also to be encouraged, and this would afford, perhaps, the most practical means toward a final solution of the problem.

Meanwhile the overcrowding of tenements should be restricted by regulating the air-space, allowing not less than 600 cubic feet to each adult and 200 cubic feet to each child of five years, and by enforcing the ventilation and lighting of rooms by means of a current of air from windows opening upon the outer air, or at least upon large air-shafts. Undoubtedly all back-to-back and rear houses should be absolutely condemned. Not only should the height of new houses be regulated according to the width of the streets, but the erection of additional stories to houses already standing on narrow streets should be forbidden. In a city like New York, where the price of building lots is ever on the increase, the natural tendency is to make the houses higher and higher, until in many of them the amount of daylight which reaches the rooms on the ground floor is so small that only the upper stories are fit to live in, the rooms in the lower stories being too dark and damp for anything but

an abode for rats. Sufficient air-space should be left behind the houses to allow thorough ventilation; nor should the corner houses be permitted to cover the entire lot; and streets should be open from end to end, so that all houses have free ventilation both back and front.

Every landlord should be required, before letting his tenements to different families, (1) to make ample and suitable water-closet provision for the number of persons who are to occupy the houses, preferably a separate water-closet to each set of apartments; (2) to supply each set of apartments with a separate water-supply and bath—cheap public baths are a fair substitute, but there is nothing like a private bath to encourage cleanly habits; (3) to provide separate storage for coal; (4) to provide sufficient means for washing clothes; and (5) to provide pantry accommodation for the keeping of food. These are not luxuries, but absolute necessaries of life for civilized beings, and therefore should be provided in every tenement. Their presence tends to promote health; their absence causes dirt, ill-health, disease and death, while it also tends to dehumanize people and to breed paupers and criminals. If we cannot prevent the aggregation of population in cities, we should at least try to make the evil effects of overcrowding as little felt as possible.

The results of injurious occupations in factories, workshops, etc., have already been greatly mitigated by the introduction of improved machinery and methods, by the regulation of hours of work, by prohibiting the employment of very young children, and by enforcing the use of fans to carry off the dust and deleterious gases, but there is still room for improvement in these matters.

Much has been done by the sanitary authorities as pioneers in the crusade against consumption, by the adoption of improved measures of sanitation, by the enforced disinfection and renovation of infected premises, by the compulsory notification of tuberculosis as an infectious and communicable disease, by the prohibition of spitting in public places and conveyances, and by the distribution of circulars of information regarding the nature of consumption. These laws and regulations should be more rigorously enforced, and especially by every means in our power—through societies for the prevention of tuberculosis and through the press, the pulpit and the schools, as well as through boards of health—we should endeavor to educate the public as to the character of this disease, more particularly with regard to the danger of communicating the malady through the expectoration of consumptives unless this is received in proper receptacles and destroyed before it can dry and mingle with the dust. And by flooding the cities, especially tenements, workshops, schools and stores, with simple notices of these facts, we should keep on advertising them, so to speak, on the highways and byways, until, like other advertisements, they are read and remembered.

But it may be asked, will it pay to do all this? The Anglo-Saxons are frequently called "a nation of shopkeepers," and we Americans particularly are said to "worship the Almighty Dollar." Some time ago I attempted to estimate the pecuniary loss to the community, as the result of the mortality and disqualifying power of consumption; and perhaps this estimate is worth recalling in connection with the relation of tuberculosis to the tenement-house problem.

It is not easy to place a money value upon human life, but, according to one of the best authorities on this subject, the economic value of the individual is what he has cost his family, the community or the State for his living, development and education—the loan, as it were, which the individual has made to him to reach the age when he can restore it by his labor. The average life-value has been estimated by different economists in Europe at amounts ranging from $750 to $1000, and over; and the law often allows far larger sums than this for loss of life and limb. It is certainly not an overestimate, therefore, to place the pecuniary life-value of a citizen of New York at $1000. Now there are, according to the official records, over 8000 deaths per annum at present in New York City due to pulmonary tuberculosis alone, and at least 7300 of these, or about 91 per cent., occur between the ages of fifteen and sixty-five, that is during the period of the greatest productive capacity of the individual. Thus taking $1000 to be the value of adult human life in this city, and the annual mortality from consumption of persons between fifteen and sixty-five years of age to be 7300, there would be an actual yearly loss to the community from this cause of $7,300,000. But a sufferer from this disease is usually incapacitated from work for a considerable period before his death, during which time he earns no wages, and a corresponding loss in producing power thus accrues to the community. Many consumptives die within the first few months and, from this point of view, influence the question comparatively little. Others again live for a number of months and some for several years. It is possible that a few of these are in the full exercise of their power and that their earning capacity is unimpaired; but the majority are in all probability burdens on their relatives or on the city. Assuming, however, that the average consumptive is incapacitated from active work for three months or ninety days only, and estimating the daily wages of the common laborer to be $1.50—the average number of deaths from consumption between fifteen and sixty-five years of age being 7300—there would be a further loss to the community in productive capacity of $985,500 per annum. Computing these amounts, and leaving out of consideration all other possible expenses connected with the illness and death of the individual, we find that there is at least a yearly tax of $8,285,500 levied in New York City by this dread disease. In this calculation, however, only the reported deaths are considered; whereas at least 30 per cent. more should be added to these, which although reported as due to some other disease are really

tuberculous. There are, moreover, at a conservative estimate not less than 20,000 cases of well-developed and recognized pulmonary tuberculosis now in the city, and an additional large number of obscure or incipient cases. If we include these two classes, a considerable proportion of which are doubtless also incapacitated from work, we may safely estimate the annual pecuniary loss to the community from consumption to be little short of ten million dollars. And the greater part of this loss, remember, occurs in the tenement-house-districts, *i. e.*, among those who furnish the real physical strength of the nation.

Taking, therefore, only a sordid view of the matter, it will certainly pay to expend money and time in the effort to check the ravages of a disease which causes such an enormous financial loss that it is incalculable. But tuberculosis does more than this: It not only gives rise to a greater loss of life and money in the world than war, pestilence or famine, but it is the source of more misery, suffering, poverty, and perhaps crime, than all the other ills to which human flesh is heir.

And yet there is no doubt that this is a preventible disease and can be more easily prevented, with our present knowledge of its origin and nature, than cholera, smallpox or the bubonic plague—other bacterial diseases which in the Middle Ages, under the name of "the Black Death," decimated the populations of the earth, as the result of still more unhygienic conditions and of greater ignorance, poverty and filth, but which now have been entirely rooted out from all civilized countries, because the necessary sanitary precautions were taken to prevent them.

Tuberculosis, although an evil much to be dreaded, is not an inevitable decree of Fate, not an unavoidable disposition of Providence, as it has been commonly thought to be; but like many other ills from which mankind unhappily suffers, the remedy for it exists to a great extent in ourselves:

> "Our remedies oft in ourselves do lie,
> Which we ascribe to Heaven: the fated sky
> Gives us free scope; only doth backward pull
> Our slow designs, when we ourselves are dull."

The skeptics tell us that to hope to eradicate tuberculosis is the dream of sanitary enthusiasts, far-fetched and Utopian. But already the mortality from this disease has been much reduced, owing to the adoption of improved sanitary methods, although carried out on a limited scale and in an irregular manner. May we not reasonably assume, then, that more vigorous and systematic measures, together with organized and cooperative action, will accomplish infinitely better results? This is an age of combinations, unions and alliances of all kinds. Why should we not combine the vast interests of doing good in this great work of practical sanitation, with the full belief and expectation that the day will come when this wide-spread and fatal scourge may be completely exterminated?

A table showing the mortality from phthisis at various ages and between the ages of fifteen and sixty-five, the total mortality from phthisis irrespective of age, and the general mortality, in New York City (Manhattan and the Bronx and Greater New York), for the years 1897-98 and 99, taken from the official records.

| | Year | Deaths from phthisis at various ages. | | | | | | | Deaths from phthisis between the ages of 15 and 65. | Total deaths from phthisis irrespective of age. | Total deaths from all causes. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0—1 | 1—15 | 15—20 | 20—35 | 35—55 | 55—65 | Over 65 | 15—65 | | |
| Manhattan and the Bronx | 1897 | 51 | 146 | 274 | 2182 | 1684 | 323 | 183 | 4463 | 4843 | 38,877 |
| | 1898 | 42 | 134 | 229 | 2148 | 1813 | 368 | 223 | 4558 | 4957 | 40,438 |
| | 1899 | 65 | 162 | 256 | 2303 | 1885 | 327 | 240 | 4771 | 5238 | 39,911 |
| Greater New York | 1898 | 69 | 238 | 398 | 3379 | 2722 | 558 | 360 | 7057 | 7724 | 66,294 |
| | 1899 | 98 | 264 | 416 | 3538 | 2837 | 522 | 340 | 7313 | 8015 | 65,343 |

NOTE.—It appears from this table that the deaths from phthisis constitute about one-eighth of all the deaths in New York City, and that about 91 per cent. of these occur between the ages of fifteen and sixty-five. Thus, for the years 1898 and 1899, in Greater New York, there were respectively 7724 and 8015 deaths from phthisis, of which 7054 and 7310 occurred between the ages of fifteen and sixty-five, or during the period of greatest productive capacity.

Only pulmonary phthisis or consumption is here considered, this being by far the commonest and most fatal form of tuberculosis and also the most easily preventable.

## TREATMENT OF LUPUS.[1]

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TUBERCULOSIS of the skin is one of the most interesting of dermatological lesions, not only from its prognosis, but from its common etiology with one of the most fatal and wide-spread diseases of the country. I feel no hesitancy, therefore, in presenting this paper to the general practitioner, and trust, with some clinical illustrations, that it may be of profit.

Long before the discovery of the tubercle bacillus, Friedländer pointed out with clearness a histological resemblance of lupus to tuberculosis in other organs of the human structure, and in lower animals. Lupus, tuberculosis cutis, and scrofuloderma, before the investigations of Koch, were diseases classified as distinct dermatological manifestations, the true etiology of which was unsuspected. At present through the discovery of the tubercle bacillus, they are placed under one common cause, although differing widely in clinical symptomatology.

It is now positively proven by inoculation, microscopical and pathological research, that the tubercle bacillus is the true cause of lupus in its many classifications, except lupus erythematosus in which the tubercle bacilli has not as yet been found and which, therefore, cannot be classified as tuberculosis of the skin. Therefore, tuberculosis cutis is an infectious, chronic disease of the skin and mucous membrane caused by a specific organism, characterized by deep and superficially-seated nodules which tend to absorption, ulceration or cicatricial atrophy.

The wide clinical field of lupus is more clear if we note the site of the tubercle in the tissue in which the infection is located. In scrofuloderma the tubercle starts in the subcutaneous connective tissues, attacking first the glands with deep ulceration, a term used by dermatologists to cover up many sins of the diagnosis in the past.

In lupus vulgaris the tubercles in the corium extend upward with ulceration, but fewer in number, not so large an area is affected as in scrofuloderma, while in tuberculosis cutis the tubercle in any situation grows rapidly and contains large numbers of tubercle bacilli, but with less tendency to ulceration. The pathological morbid anatomy of the tubercle in these affections has the same groundwork and depends upon the activity of the Koch bacillus.

In the treatment of cutaneous tuberculosis we have as yet no specific serum that can neutralize the virus and produce absorption of the tubercle. Our expectations, so brightened by Koch in 1889 with the first reports of the treatment of lupus by its advocates, have gradually faded. With the use of the serum there was temporary improvement, but the pronounced reaction of the serum endangered life and caused its abandonment, and relapse soon occurred. Internal treatment alone has nothing, therefore, to offer, except when the patient's general condition is below par, when the use of internal medications, such as tonics, is indicated; yet many persons afflicted with this disease enjoy the best of health in every other particular.

External treatment may be divided into surgical and mechanical. Excision has been used with good results, but will always meet with objections when the lesions are on the face, since skin-grafting must be resorted to in this method, and healthy skin is often sacrificed and recurrence is common in the new skin.

The most satisfactory surgical treatment in my hands is the curette. With a common dermal curette one is able with but little experience to distinguish readily the healthy tissue from the broken-down cheesy degeneration of the tubercle. In this method one does not destroy bands or islands of healthy tissue, which if left aid far more in healing than the skin-graft which would have to be used in excision. In this treatment it is always best to operate without freezing mixtures, as anesthesia by such mixtures alter the color and texture of the tissues, and thus render it difficult to see or feel the diseased areas.

Linear scarification is a treatment that has been used with success in cases that are new and not broken-down. I have never made use of this method, as it is slow and objectionable.

Electrolysis is advocated by Dr. Jackson, who reports good results in recurrent lesions. I have used his single-needle methods in few cases, all of which have proven very satisfactory. A small galvanic battery is used, one that can be relied upon to give an even current, an epilating needle-holder, platinum needle, and good light are the accesories. The lesion is first sponged with ether, the positive pole is then placed in the hands of the patient, and the negative pole contains the needle and is passed directly into the tubercle. A current of two milliamperes is sufficient, just whitening the tissues without burning them. The needle is swept around in the tubercle for about ten seconds, then withdrawn and passed into the same tubercle from the opposite direction, being careful not to burn epithelium, in which case ulceration and scarring result. The effect of electricity upon the tubercle nodule or lupus is two-fold, the heat destroys the germs and the electricity stimulates cell-changes.

Mechanical treatment consists in the use of escharotics and caustic pastes which will most rapidly destroy the tubercle. Those that meet with most favor are those that will destroy diseased tissue and not have any effect on the surrounding tissues. Nitrate of silver stands first, either in stick form or in solution. Patients prefer it to the knife, although it is painful. It will penetrate and destroy the isolated tubercle, as well as the infiltrated area, will spare healthy tissue, and is unattended with danger.

[1]Read before the Detroit Medical Society.

Arsenical pastes, although more painful than silver nitrate, destroy diseased tissue only. Their action is more rapid, but they cannot be applied to large areas because of absorption. All cases treated by caustics should be seen every twenty-four hours. Many of the stronger acids have been used, but they are objectionable because they destroy healthy as well as diseased tissue. Pyrogallic acid is an exception and possesses an advantage over the others by attacking diseased tissue only, and its use is not attended by any bad results. Whatever may be the line of treatment followed, either surgical or mechanical, one may be compelled to use both methods.

My purpose in presenting the subject of lupus was to bring before the Society a treatment comparatively new, concerning which good reports are reported from abroad, as well as from this country. This treatment is by means of the X-ray exposure. Dr. Pusey of Chicago, in a paper not long ago, reported treatment of grave recurrent lupus and other chronic skin affections. In his experiments he discovered that a number of exposures would blanch the hair, destroy the hair bulb, stimulate nutrition of chronic indurated lesions, and reduce inflammation. Upon these observations, the treatment of chronic skin affections was based.

In passing the X-ray through the spectroscope, one sees at the chemical end of the spectrum a combination of two of the primary colors, red and blue, or ultra violet. It is I believe by the action of the stronger chemical colors that the stimulating influence on the tissues by the rays is produced. This is the same principle as that devised by Finsen, in which he used the ultra violet rays of white light. The results are about the same, except the X-ray is somewhat more rapid in its action with shorter exposures, and larger areas may be treated at one sitting than by Finsen's method, so there must be some similarity in the fundamental agencies of these methods.

The treatment of lupus by the X-ray has many advantages. It is painless, the exposures are short in duration, the area treated may be of any size or location, no scarring from treatment if exposures are properly conducted, the time of exposures is regulated by the density of the rays, and the results are evident with much less scar tissue.

The antiseptic power of the X-ray is as yet unsettled. Some of the investigators say that the tubercle bacilli will thrive under any exposures to the X-ray, while others claim that they are destroyed. I have with me a series of tubes inoculated from a pure culture of the tubercle bacilli. Using two tubes as controls, I exposed all the tubes, one, fifteen minutes, three, a half hour, and two, three-quarters of an hour, through the opening of the tube four inches distant. I also exposed two tubes three-quarters of an hour through the glass. All the tubes were placed in the incubator at the temperature of the human body and the cultures examined every twenty-four hours. In forty-eight hours distinct growth was seen in all tubes exposed and not in the control tubes. Since the average time for culture of this germ sufficient to show growth is about six days, a marked acceleration in the growth of the germ was brought about by exposure to the rays; therefore it cannot be said that the action of the rays on lupus lesion is an antiseptic one.

The following case is a typical one, showing the effects of treatment by this means:

Mr. G. was born in Germany in 1834. He emigrated to the United States in 1868, was a painter by occupation and has always been in rugged health. No tuberculosis in family. In December, 1899, he noticed a pimple on his left forefinger which he thought was the bite of some insect; no attention was paid to it, but in a few weeks it became more inflamed, and instead of subsiding it became more irritable. In two months it had increased in size to such an extent that it warranted curettement, and was thoroughly curetted by Drs. Marker and James, and dressed antiseptically. The lesion remained stationary for over two weeks, when the hand began once more to swell and there was infiltration into the deeper structures of the skin with rapid growth.

When I first saw the lesion this was the history: Formalin had been suggested as an antiseptic dressing and the patient was brought into the Alumni Clinic and exhibited and diagnosed as a typical tuberculous lesion of the skin by Prof. Carrier and others. It was announced to the Alumni that this case would be treated by exposures to the X-ray and the result reported. In July, before the exposures were begun, the lesion was covered with ulcerative tubercles, deeply seated. There was a watery discharge and marked induration of surrounding tissues which were much increased in size and were painful.

On July 21st the first exposure of eight minutes was given, the hand being held six inches from the tube; July 23d a second exposure of ten minutes was given after which the patient expressed himself as having less discomfort in the lesion. On July 25th there was another exposure of ten minutes; July 26th the fourth exposure of ten minutes after which there was a noticeable improvement. The inflammation became much less, the ulcers began to fill in from the edges, the discharge grew less and the induration of the tissues began to diminish in thickness. July 27th, a ten-minute exposure; July 30th, a ten-minute exposure; August 1st, a ten-minute exposure; August 3d, a ten-minute exposure. After these exposures there was the same marked improvement. The exposures were then discontinued and the lesion healed. In all there had been eight exposures extending over a period of fourteen days. During this course of treatment no dressing was applied to the lesion except the bandage.

There was not any burning or change in the surrounding normal tissues, except slight blanching, slight atrophy, and stimulation of hair bulbs. In all of my skiagraphic and chronic ulcer treatment, I have had no X-ray burns.

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## A REPORT OF SOME CASES OF ABDOMINAL SURGERY, WITH REMARKS ON THE DIAGNOSIS OF CARCINOMA OF THE CECUM AND THE SURGICAL TREATMENT OF CARCINOMA OF THE LIVER AND THE GALL-BLADDER.

BY CHARLES GREENE CUMSTON, M.D.,
OF BOSTON, MASS.

*(Continued from page 219.)*

THE next case is one of extreme interest and rarity; it is one of carcinoma of the cecum complicated by appendicitis, and, on account of the rarity of malignant growth in this region of the gut, I will ask permission to make a few remarks on the symptomatology of this affection after I have reported the case.

*Case VI.*—Mrs. C. F., aged forty-one years, was seen in consultation with Dr. Frederick Coggeshall, who gave the following history: Her antecedents were excellent, as well as her family history. Her father, mother, brothers and sisters are all living and in excellent health. About March 1, 1900, Dr. Coggeshall was called to see the patient who was suffering from the typical symptoms of appendicitis; the pulse was of a fair quality at 120, and the temperature was 38° C. (100.4° F.). There was much tenderness in the region of the appendix. The patient recovered from this attack in two days, but in the early part of May a similar and more severe attack occurred, the temperature being about 38.5° C. (101.3° F.) and the pulse ranging about 120. Again she recovered from this attack in a couple of days, but she said that during the interval of the attacks she had suffered considerably from flatulency and a tendency to diarrhea.

On May 20th Dr. Coggeshall removed the appendix which was found somewhat dilated and the mucous membrane in a state of hyperemia. There was a small erosion at one point of the mucous membrane near the tip of the appendix where the latter was adherent to the cecum. The patient made an uninterrupted recovery, but she continued to be troubled with flatulency and constipation while in bed. Two weeks after the operation she went out feeling very well, but within three or four days she again began to be troubled by attacks less definitely marked, but similar to those for which the operation of appendectomy had been performed. The tympanites and colic became constantly more and more frequent, the attack usually ending by bilious vomiting and one or two dark, watery stools. These symptoms were aggravated by being on her feet and would subside after a day's rest in bed. Tenderness over the region of the cecum was now constant, and the pain started from that point radiating toward the umbilicus. After about two weeks of apparent improvement the symptoms returned, and two points in the abdomen now became the special seats of distention with gas, namely, the region of the cecum and of the sigmoid flexure. The pain was now constant, but occurred in spasms corresponding to somewhat rhythmical dilatations with gas of the portions of the bowels just mentioned. The principal seat of pain had now shifted to the hypogastrium and umbilicus, and the patient was becoming weaker and losing flesh, and I was requested to see the patient.

Upon examination I found that by deep palpation of the right iliac fossa a small hard immovable mass could be detected apparently in the region of the cecum. The intestines were greatly distended and the entire abdomen was tympanitic, even in the right iliac fossa. The patient had vomited on several occasions during the three days previous to our visit, and it was with difficulty that a stool could be obtained. The pulse was of a fairly good quality, regular and about 100 to the minute. The tongue was furred, the eyes were sunken and the face pinched.

A diagnosis of intestinal obstruction seated in the neighborhood of the cecum was made, but the nature of the obstruction was a question; still, on account of the previous operation for appendicitis, it was thought probably due to adhesions constricting the gut and operation was advised. This was not consented to at the time, but, as all the symptoms increased in severity and the patient was very rapidly losing ground, five days later I opened the abdomen in the median line.

There was great difficulty in keeping the intestine out of the way on account of the great distention. The cecum was bound down in the iliac fossa, and, by passing toward the ascending colon, a small hard mass the size of a large English walnut was detected. A small transversal incision perpendicular to that in the median line was made in order to give more working space, and after a long and difficult dissection with the fingers the cecum and neoplasm were freed of the adhesions and brought up into the wound. The growth was an annular carcinoma of the intestine situated at the junction of the cecum and ascending colon. Search was made for enlarged lymphatic glands of the mesentery, but none could be found. At this point of the operation the patient, who had been in a very precarious condition, showed such a marked state of collapse that the time necessary to do a resection of the cecum and intestinal anastomosis could not be spared, and it was decided to make an artificial anus in the cecum with the hope that the patient might rally sufficiently to undergo resection of the cecum and part of the ascending colon in a short time. An artificial anus was made in the median line, according to the technic advocated by Mr. Cripps. The patient, however, only survived the operation a few hours.

The symptoms of carcinoma of the cecum have their importance because, by reason of the small number of cases that have been diagnosticated as such during life and have been reported, little

attention has been given them in the classical works on general or special surgery. The commencement of the disease is usually remarkable by its latentcy, but always comes to an end as soon as the growth has developed sufficiently to be made out by palpation, and at this time the period of full development has been reached. The symptoms which first draw the physician's attention to the cecum do not always follow in the same order, but in the order of frequency of their apparition they may be classed as follows: (1) Pain; (2) alternating diarrhea and constipation; (3) loss of flesh; (4) dyspeptic disturbances; (5) intestinal hemorrhage. Occasionally the functional symptoms are absent, and only those are met with which occur when it has arrived at its full development, and thus we find reported cases in which the tumor in the right iliac region was detected before it had given rise to any other symptom, while in one case the affection made its presence first known by the formation of a fecal fistula.

Pain is usually the first symptom complained of by the patient and in the beginning has no precise localization, but later on it becomes localized in the right side of the abdomen, more particularly in the iliac fossa, and then it will shoot down the legs into the lumbar or sacral region, or toward the umbilicus, as in our case. In the case I have here related the pain, which followed a traumatism on the abdomen, never completely disappeared after the accident, and this has been the history in several other reported cases. Kraussold relates the history of a patient who received a kick in the right iliac fossa and pain persisted for six years with slight remissions, and then disappeared completely after a spontaneous fecal fistula had formed. Pain may be produced by movement, and in one case the patient who remained in bed lying on the back complained of pain as soon as any motion was imparted to the right leg. In other cases the pain was greatly increased if the patient became constipated, and would completely disappear after the bowels had been moved, while in other cases pain was constantly present and increased during meals; I would particularly insist on this point, because this symptom was very marked in our case. At other times it has been found to occur at regular intervals and always at the same spot.

During the early part of the evolution of the disease an alternating diarrhea and constipation are nearly always present. Sometimes these alternatives follow vomiting, while at others an alternating diarrhea and constipation are finally entirely replaced by a continuous diarrhea, which will most likely be relieved by some astringent mixture containing opium; but, nevertheless, the diarrhea may become uncontrollable and even be the cause of death. In other cases constipation becomes more and more obstinate and may give rise to symptoms of intestinal obstruction. There is hardly any case recorded where sooner or later the passage of feces did become sufficiently difficult to produce accidents of severe type, but the obstruction was in most cases simply temporary, and was relieved by proper medical treatment. In other cases diarrhea alone was present, and it may exist for a long time; the liquid feces have no particular pathognomonic significance; occasionally pus and blood or pus alone may be present.

Violent intestinal colic may be added after a time to the foregoing symptoms and become most excruciatingly painful and constantly present. It is the result of violent intestinal contractions due to the obstacle which is opposed to the downward movement of the intestinal contents by the neoplasm, and it reaches its maximum of intensity when the bowel has become completely obstructed.

Some patients become thin and lose their strength at the very onset of the affection, and the loss of flesh may be very rapid. Digestive disturbances have been frequently met with during the initial period of carcinoma of the cecum. They consist principally of nausea, vomiting, anorexia and difficult digestion. The vomitus is usually mucous, but it may become bilious and contain food. Fecal vomiting will occur if symptoms of occlusion arise, but they may subside spontaneously or by an appropriate treatment. In one case fecal vomiting occurred one year before any tumor could be palpated. Vomiting has been observed when the obstruction was not very marked. In other cases the vomitus was yellow and had a fecal odor, but was not fecal in nature, while other patients complained of a fecal taste in their mouth without having fecal vomiting. Many years ago Despres pointed out that when yellow vomitus with a fecal odor took place, or when patients complained of a fecal taste, carcinoma of the intestine should be at once suspected.

Intestinal hemorrhage is not a frequent symptom in carcinoma of the cecum, but small hemorrhages may occur which color the feces black; in a few instances the hemorrhage was sufficiently severe to become serious. In one case the blood was mixed with pus.

The physical symptoms are observed when the carcinoma of the cecum has attained its full development, and they characterize the disease. By far the most important is the appearance of a tumor in the right iliac fossa. In the early stages it is movable under the abdominal wall and also over the deeper structures. The neoplasm, which in the beginning is limited to the intestine, will finally invade the pericecal cellular tissue and throw out narrow adhesions between the diseased structures and the iliac fossa, or the neoplasm may become adherent to the abdominal wall. Later on the lymphatic glands become involved and their number and size vary very greatly in different cases. After the lymphatics have become greatly involved a large tumor may be felt which may project at a point quite distant from the primary neoplasm, as, for example, at the umbilicus or in the epigastric region. The tumor will now be found to be very adherent, and it may happen that from its size it compresses the

iliac vessels so that an edema of the right lower limb will arise.

The next case is that of carcinoma of the gall-bladder with secondary deposits in the liver, and it is particularly interesting inasmuch as it is an additional proof that gall-stones are a causative factor in the etiology of carcinoma of the gall-bladder.

*Case VII.*—Mr. W. F., aged forty-nine years, had always been in excellent health with the exception of typhoid fever fifteen years ago. During the last seven years he had had frequent severe attacks of gall-stone colic accompanied by great pain and marked jaundice. For the last two years these attacks had become more and more frequent so that when I first saw the patient in January, 1897, he was having them on an average of every ten weeks. I attended him through three attacks of gall-stone colic as severe as I ever saw, and finally got the patient's consent to operate for their removal.

Cholecystotomy was done in September, 1897. The operation was very simple; the gall-bladder was not very much enlarged and was easily drawn up to the incision and sutured to the peritoneum. It might have been the size of a small Bartlett pear. After the gall-bladder was incised, it was found that its walls were of excessive thickness, measuring about 2½ centimeters. A small amount of bile came away through the incision in the fundus of the organ, and four large mulberry calculi, varying in size from a strawberry to a cherry were removed, as well as 25 or 30 smaller stones. Two large rubber drainage-tubes were placed in the gall-bladder and the remainder of the abdominal incision was closed. Convalescence was uninterrupted; the drains were removed at the end of ten days and the wound healed immediately, no fistula remaining, and the patient was discharged from the hospital in about four weeks.

He remained in excellent condition until May, 1898, when he came to me complaining of a fulness in the region of the gall-bladder, which interfered somewhat, as he thought, with respiration, especially when he went up-stairs or coughed, on which occasions he felt a few stinging pains. Palpation revealed a mass in the region of the gall-bladder, and the liver dulness was increased about one fingerbreadth below the border of the false ribs. In every other way the patient felt perfectly well; his bowels were regular and the stools were dark in color. His appetite was good, although his tongue was somewhat furred, and he slept well.

I made a diagnosis of carcinoma of the gall-bladder and advised immediate operation, which was done two days later. An incision carried along the external border of the rectus was made, and after exploring the abdomen it was found that the gall-bladder presented a large number of nodules over the surface, and that it was intimately adherent to the duodenum, the omentum, the abdominal wall, and the under aspect of the liver. After separating the adhesions, which was a rather delicate proceeding, it was found that the entire gall-bladder had undergone a carcinomatous transformation, and that on the border of the right lobe of the liver was a secondary deposit of the neoplasm, in circumference about the size of a 25-cent piece. Cholecystectomy was performed, the area of the liver to which the gall-bladder adhered being removed by the Paquelin thermocautery, and then we proceeded to remove that portion of the liver which had become secondarily involved. With the Paquelin a V-shaped resection of the liver was made, including the carcinomatous nodule. The piece of liver removed was triangular in shape and measured 11 by 6½ centimeters. On section it was found that the secondary carcinomatous nodule was entirely imbedded in healthy parenchyma, so that we felt sure that we had freely removed the growth. After the piece of liver had been removed, a large vein in the parenchyma of the organ began to bleed very freely and, as much blood was being lost and the hemorrhage could not be controlled by packing, a stout needle was passed through the liver parenchyma and brought out so that a ligature was passed around the bleeding vessel and tied, completely controlling the hemorrhage.

The large cavity left by the removal of the gall-bladder and the resection of the liver was packed with gauze, which was brought out at the upper angle of the abdominal incision, the remainder being closed in three layers of sutures. After this operation the patient made an uninterrupted convalescence; all the gauze packing was out by the end of a fortnight, and he was discharged well five weeks from the time of the operation. We saw the patient in August, 1900, at which time he was complaining of considerable pain in the abdomen, and was deeply jaundiced. Abdominal palpation revealed an enlarged liver, its borders reaching four fingerbreadths below the border of the ribs, and over its surface could be felt a number of nodules of carcinoma.

There is no doubt in my mind that at the present time the only proper treatment of cases of carcinoma of the gall-bladder and of the liver is cholecystectomy and resection of the diseased portion of the liver. Generally speaking, I believe that cholecystectomy as a typical operation should be confined to cases of severe inflammatory lesions and malignant tumors of the gall-bladder, which, as we all know, are most frequently carcinomatous in nature. The experiments carried out by Rose all justify the opinion that extirpation of the gall-bladder is only justifiable in cases of malignant transformation or severe inflammatory lesions, and Heddaeus says that in cases of extensive carcinomatous transformation of the gall-bladder cholecystectomy is the proper operation to select, and if the liver be also involved in the process, partial resection should be attempted.

Extirpation of the gall-bladder for carcinoma was first performed in 1887 by Bardenheuer, but the patient died shortly afterward from a cardiac embolus. Hochenegg of Vienna was the first to

successfully remove the carcinomatous gall-bladder combined with extirpation of a good-sized piece of carcinomatous liver. His patient was a woman, aged fifty-eight years, who for six months had complained of pain under the right costal border, with loss of flesh and the presence of a tumor the size of a hen's egg in the region of the gall-bladder. The growth appeared to be very hard, and, as it could be displaced by palpation, it was uncertain whether it was connected with the liver or not, and the diagnosis of carcinoma of the pylorus, or of the colon, was made, which proved to be incorrect when the abdomen was opened. It was then found that the gall-bladder was considerably enlarged and as hard as stone, and a tumor the size of a walnut was found in the edge of the liver and had infiltrated the parenchyma of the organ to about two centimeters in depth. A loop of intestine which was adherent to the gall-bladder was peeled off and then drawing the right border of the liver forward, dissection was carried out as far as the cystic duct. The latter was freed of its attachments and then cut between two ligatures with a Paquelin cautery, and the part adherent to the gall-bladder was separated from it without much hemorrhage. Then the region of the liver which was infiltrated by the secondary deposit of the neoplasm was excised by means of a curved incision, which included normal parenchyma of the organ; hemorrhage was only moderate in amount. When the wound in the liver was brought together by sutures, these tore out, so it was decided to treat the part extraperitoneally, and in order to do this iodoform-gauze tampons were fixed in place by mattress sutures, the whole being covered by an abdominal dressing. When this was changed eleven days later the liver was found to be granulating well and a perfect cure was effected in six weeks after the operation. Seven months later no recurrence had taken place.

The gall-bladder which had been removed contained 52 stones, some of them the size of a cherry. The walls of the organ had undergone a fibrocarcinomatous transformation and were about 6 millimeters thick. The piece of liver removed measured 3½ centimeters in thickness and 4½ centimeters in length; the free border showed the presence of a carcinomatous infiltration, but the section had been carried in perfectly normal parenchyma.

Von Winiwarter has recorded the case of a woman, aged fifty years, who six months previously had become suddenly attacked with pains in the epigastrium without any apparent cause; they radiated toward the right and then suddenly disappeared. After this attack the patient felt quite well for several months, although there were certain digestive disturbances from time to time. During the past five or six weeks she again complains of pains, the attacks occurring five or six times a week and generally lasting from half an hour to an hour. The patient also complained of great weakness and general debility. The feces were at no time discolored, but small gall-stones were found from time to time. By palpation no tumor could be made out, and there was no apparent increase in the size of the liver, and a diagnosis of biliary calculi, with probable carcinoma of the gall-bladder, was made.

The abdominal cavity was opened by a longitudinal incision carried along the external border of the rectus muscle. The liver was found to be normal in consistency, while the gall-bladder had reached the size and shape of a medium-sized pear. It had contracted adhesions with the surrounding intestine and was quite as hard as cartilage to the feel. These adhesions were ligated and cut and the fundus of the gall-bladder was temporarily walled off from the peritoneal cavity by strips of gauze, after which it was opened. The wall of the organ at its fundus was nearly a centimeter thick, and presented a carcinomatous transformation. Near the upper surface, which was toward the liver, the wall of the organ became thickened forming a nodule the size of a hazelnut. The gall-bladder contained but a small amount of bile, and over a dozen small, light, faceted calculi. The carcinomatous wall of the gall-bladder had become intimately connected with the parenchyma of the liver, and at the sharp border of the latter there was a whitish nodule of carcinoma the size of a walnut, set in the parenchyma of the liver. The cavity of the gall-bladder was emptied and then packed with tampons, and then silk ligatures were carried through the liver substance and tied, after which the incision was carried into the normal parenchyma of the organ with the knife of a thermocautery, and the piece was removed without hemorrhage. Sutures were then passed around the carcinomatous nodule in the liver, and a wedge-shaped piece containing the secondary deposit was excised. The cystic duct was then isolated, but the operator was obliged to go as far back as the ductus choledochus, because at this point there was felt a small nodule and it was uncertain whether or not it was a stone or a malignant deposit. A ligature was then passed beyond this nodule and the entire gall-bladder with the cystic duct and pieces of liver were removed. The pedicle was then drawn out and united to the parietal peritoneum by means of sutures. The stump contained the commencement of the ductus choledochus as well as the opening of the hepatic duct. The cavity was then packed with idodoform gauze and the remainder of the abdominal wound was closed by layers of buried suture.

The specimen showed that the wall of the gall-bladder had become thickened to about double its natural size; it was fibrous and interspersed with very hard, white nodules the size of a hazelnut while the nodule removed from the liver microscopically proved to be a secondary carcinomatous deposit.

Within two weeks after the operation a roundish growth the size of a hazelnut was noticed at the bottom of the fistula which had existed since the operation. This nodule had evidently developed from the suspicious formation which was

present on the surface of section of the ductus choledochus, and the recurrence had started and developed so rapidly that the patient died six weeks after the operation.

*(To be Continued.)*

## CLINICAL MEMORANDA.

### PREGNANCY AND TYPHOID.

By G. H. B. TERRY, M.D.,
OF WYALUSING, PENNSYLVANIA.

ON October 26, 1900, Mrs. M. G., aged twenty-nine years, during the fourth month of her third pregnancy was attacked by typhoid fever. The temperature during the first week rose to 104° F., pulse 112. The symptoms then gradually abated and the patient was convalescent at the beginning of the fourth week.

On April fifth following the attack the patient gave birth to twin girls, healthy and weighing respectively six and seven pounds.

The diagnosis of typhoid was at no time in doubt, but was strengthened by the fact that a sister of the patient contracted the disease while engaged in nursing the case referred to and also by the fact that a member of another family who moved into the same house contracted the disease a few months later.

The case is interesting, showing as it does that pregnancy, even a twin pregnancy, does not confer immunity to typhoid, as was at one time taught, and that however undesirable it may be to have pregnancy exist during the disease, it does not necessarily interfere with its favorable termination.

### FOREIGN BODY IN THE URETHRA.

By H. W. CLOUCHEK, M. D.,
OF ANN ARBOR, MICHIGAN.

A PECULIAR case came under my notice in December which I thought might interest your readers, having noticed various articles in the MEDICAL NEWS of cases with foreign bodies in the urethra.

The history of the case, in brief, is as follows: A. D. S., male, aged seventy-two years, American, contractor, married, was admitted to hospital December 6, 1900, because of pain in the bladder and difficulty in passing urine. The patient has had heart trouble and a double hernia. The present trouble began about four years ago with trouble in holding the urine. A physician at that time sounded, found a stone in the bladder, and advised operation. This was declined by the patient. Four or five weeks ago he was unable to urinate and inserted a straw of "barn grass," about seven inches long, into the urethra in order to relieve pain. On letting go of the penis its head was drawn over the end of the straw and the patient was unable to extract it. Three days later a brick-dust material came away, then blood and pus. The discharge of pus has continued up to the present time. The urine is dark and cloudy and contains large amounts of albumin and pus. Examination shows the straw in the urethra extending up into the bladder. I have known of many articles being used as a catheter, but this is the first instance which has come under my observation in which a straw was employed for this purpose.

## MEDICAL PROGRESS.

**Active Principles of Digitalis.**—Much uncertainty has always existed concerning the relative value of the several preparations of this drug, and especially in regard to the physiological action of the various active principles which have been so poorly isolated. The rules governing the selection, gathering, preservation and preparation of this drug are so lax that certainty of action cannot be expected. L. L. SOLOMON (*N. Y. Med. Jour.*, Feb. 9, 1901) enumerates the glucosides as six forms, of digitalin, digitoxin, digitophyllin, digitalein, digitonin and digitin. The solubilities of the several principles are not identical and, hence, the activity of a tincture, a fluid-extract and an infusion are by no means the same. Digitonin, readily soluble in water, sparingly in alcohol, is a cardiac depressant, antagonizing the cardiac action of digitalin and digitoxin, but it is the most active diuretic principle and is very irritant to the stomach. Digitin is inert and very little is known of digitophyllin. Digitalin, digitalein and digitoxin are all cardiac stimulants, acting on the heart-muscle. Digitalin is unique on account of its special influence in contracting the blood-vessels, increasing the pressure and slowing the heart. Digitoxin does not raise pressure and, as has been demonstrated, dilates the renal vessels. The therapeutic value of the latter preparation when isolated is, therefore, much enhanced. Digitoxin acts quicker than digitalin, sometimes within twelve hours, is less liable to cumulative effects, and much more diuretic. The uniformity of its action and strength will make it a very valuable drug. It is administered hypodermically or by the mouth, in doses of $^1/_{250}$ to $^1/_{1000}$ of a grain. Since it is liable to be precipitated on coming in contact with the secretions, the author has found the following an admirable vehicle:

| | | |
|---|---|---|
| ℞ | Digitoxin ..... | (gr. $^1/_{250}$) |
| | Chloroform ..... | (♏ jss) |
| | Alcohol (90 %)..... | (♏ xxiij) |
| | Aquæ .....q.s. ad. | (℥ ss) |

**Congenital Hypertrophy of Cervix Uteri.**—ABRAM BROTHERS (*Am. Gyn. and Obstet. Jour.*, Jan., 1901) reports the case of a girl, seventeen years of age, who presented this rare condition. She began to menstruate at eleven and was always regular. When she was fourteen years old she noticed the womb projecting from the vulva.

She underwent an Alexander operation at one of the large hospitals, but left at the end of five weeks absolutely unrelieved. From that time, until she came into the writer's hands, she went from one doctor's office to another. Brothers found a slim, delicate, anemic child, with an expression of anguish on her face, who walked with body bent forward, evidently suffering great pain. She was feverish and complained of anorexia, vomiting, diarrhea, and pelvic pain. The cervix was eroded and protruded one inch from the vulva. There was a cystocele and also a rectocele. A thick mucopurulent discharge filled the uterine canal. The uterus was large, and on both sides of it were large, boggy masses, tender to the touch. A diagnosis of complete prolapse of the uterus, with bilateral pyosalpinx, was made and the uterus and pus tubes were removed in one mass. The girl left the hospital on the sixteenth day, and when seen six months later was still perfectly well. Measurement of the uterus showed that the distance from the fundus of the uterus to the internal os was one inch and that between the internal os and external os was two and a quarter inches. Therefore, the case was one of congenital hypertrophy of the cervix, associated with prolapse of the uterus and later complicated with bilateral pyosalpinx. Brothers thinks that the pyosalpinx was the result of the free use of sounds, etc., while the girl oscillated from one doctor's office to another, and that there was no reason to suspect a gonorrheal origin.

**Intestinal Hemorrhage and Fatty Heart.**—A patient, fifty-eight years of age, usually very well, was operated on by C. PHELPS (*N. Y. Med. Jour.*, Feb. 9, 1901) for an umbilical hernia. During the anesthetic he was very cyanotic and his breathing was irregular. He reacted well, but on the third day his pulse and temperature were very high and on the fourth day signs of internal hemorrhage and collapse appeared. Much blood was passed from the bowels and some was vomited. Autopsy showed a healthy wound and peritoneum, a moderate cirrhosis and a very fatty heart. The muscular walls of the right ventricle were not much thicker than paper. The additional strain of the anesthetic and operation is supposed to have overburdened a weakened heart and induced sufficient congestion to result in hemorrhage from the intestinal and stomach mucous membranes.

**Retropharyngeal Abscess in Adults.**—This condition rarely occurs after the age of four. Bokay classifies retropharyngeal abscesses as follows: (1) Idiopathic abscesses; (2) secondary abscesses from disease of the cervical vertebræ or from irrigation of pus from a superficial cervical adenitis; (3) septic abscesses; (4) abscesses from trauma. J. L. GOODALE (*Boston Med. and Surg. Jour.*, Jan. 31, 1901) reports a case of retropharyngeal abscess of special interest, because of the age of the patient and because of the demonstration of tubercle bacilli in the pus. The patient was a youth, eighteen years of age, who, though feeling perfectly well, complained of a swelling in the back of his throat which had been developing for four weeks. Examination showed a bulging forward of the whole posterior pharyngeal wall, due to the fluctuant swelling extending downward from the level of the soft palate. The mucous membrane over the swelling appeared normal. A free incision was made and about four ounces of pus evacuated. A guinea-pig, inoculated with the pus, was killed seven weeks later and showed all the characteristic lesion of tuberculosis. This case seems unquestionably one of tuberculous retropharyngeal lymphadenitis, ending in suppuration. The writer says that he has been unable to find in literature any report of a case of tuberculous retropharyngeal lymphadenitis in the absence of caries of the spine, such as the case he now reports.

**Infantile Scurvy.**—This condition is, in most instances, one of the easiest of all the diseases of infancy to diagnose, as well as to treat. In some cases it is more difficult to recognize, generally because at first the symptoms simulate other affections, particularly rheumatism. CROZER GRIFFITH (*Phila. Med. Jour.*, Feb. 2, 1901) reports in detail sixteen cases, most of which presented symptoms simulating rheumatism. In some of these cases a diagnosis of rheumatism had been made by the attending physician. Pains in the arms or legs were an early symptom in these cases, followed by a swelling and redness, and also bleeding of the gums. The children also lost flesh and became peevish and fretful, crying a good deal. The pains in the legs were often of an intermittent character, sometimes disappearing for days. In some of the cases the diagnosis was rather difficult, being established only by treatment. In one case hematuria was the sole symptom of scurvy, and this disappeared completely after a few days' treatment with orange-juice. The cause of scurvy is clearly dietitic, yet no one dietetic fault can be held responsible. Most of these cases had been fed upon some commercial food, such as Horlick's Malted Milk. One of these cases promptly got well by the simple omission of the patented food from the dietary. In some cases the sterilization of milk has seemed to produce the disease. The affection of the gums is not usually the first symptom of the disease, and the disease may exist without it. This symptom is usually absent if no teeth have appeared. Pain, oftenest in the legs, is most frequently the first symptom, and this fact is the cause of so many mistakes in diagnosis. This is the reason scurvy is so often called rheumatism. The treatment of the disease is simple, and consists of a proper alteration of the diet and, even without this, the administration of fresh fruit-juice. Orange-juice, without any change of diet, brought about a prompt recovery in several of these cases. The diet should not be altered too quickly, lest this cause a fatal diarrhea or gastritis. Raw milk is to be preferred to heated milk, when it can be safely used.

**Renal Insufficiency.**—It is always important to ascertain the amount of solid matter excreted by diseased kidneys and also helpful in many cases of functional disturbances in elimination. J. T. JELKS (*N. Y. Med. Jour.*, Feb. 9, 1901) gives an easy method of making such a determination. The entire amount of urine passed during the twenty-four hours is collected. Take the specific gravity and multiply the last two figures by the coefficient of Häser, 2.33. This will give the number of grams in 1,000 cubic centimeters of urine, and the total amount can be easily obtained. A normal adult man should excrete from 1,000 to 1,200 grains according to his weight.

**Corporeal Specific Gravity.**—Although the absolute weight of the body is a valuable sign in determining the physical condition of a patient, yet it does not always reflect the true state of health, for a very heavy man need not be obese, nor need a light man be emaciated. Much more definite and valuable assistance can be had from the determination of the specific gravity. H. STERN (*Med. Rec.*, Feb. 9, 1901), after considerable experience, suggests that the simplest method of ascertaining this point is by the Archimedean principle by which the density is obtained by dividing the absolute weight of the body by the loss of weight which it sustains when suspended in water. He believes that if the specific gravity is below 1,063 or above 1,073, unsoundness of the organism is denoted. Low density means satiation with water or preponderance of adipose; the high figure means disturbed metabolism, general atropic state, or senility. There is also a greater predisposition to infectious diseases when the density is low, and increased susceptibility to eliminative disorders when it is high. Strength and endurance are deficient among those at either extreme, and the duration of life depends so much upon corporeal density that this physical sign should become a valuable one to life-insurance examiners.

**Amœbic Abscess of the Liver.**—Four cases of this disease are reported by C. R. DARNALL of the U. S. Army Hospital-ship "Relief" (*N. Y. Med. Jour.*, Feb. 9, 1901), two being fatal. Amœbæ coli were found in the pus of all cases. Dysentery was present in only two. Pain in the right shoulder and right hypochondrium, tenderness and moderate fever were present in all. There were no chills, and sweating was moderate in only two patients. Emaciation was extreme and moderate leucocytosis characterized all. The appetite continued excellent and there was no nausea or vomiting in any patient.

**Obliteration of Right Ureter by a Calcified Fibroid.**—MAURICE H. RICHARDSON (*Boston Med. and Surg. Jour.*, Jan. 24, 1901) reports the case of a woman, fifty-eight years of age, which illustrates the dangers of leaving an old fibroid unmolested. The patient had always been well until ten years ago when she noticed in the right lower abdomen a tumor, which gradually increased in size. She had had two children and had always menstruated regularly until the menopause, which occurred when she was forty-five years of age. At times she complained of more or less pain from this tumor. She began to have frequent and painful micturition about three years ago, and at times she was unable to hold her water. The urine was cloudy and the odor became quite foul. There was loss of weight and appetite, and the bowels were constipated. On examination a large fluctuating tumor of the lower abdomen was found. On exposure of the tumor it proved to be a fibroid of the uterus, upon which was a large cyst. The tumor was either a uterine fibroid closely connected with a cyst of the broad ligament, or a fibrocyst of the uterus, and was deeply attached. The deeper portions of the tumor on the right side were calcified and of stony hardness. Separation of the tumor was exceedingly difficult. A clear liquid was noticed welling up from the deep parts. The source of this fluid proved to be the right ureter which had been torn transversely. This ureter apparently ended at the calcified portion of the tumor, as no distal orifice of the ureter could be found. Above the orifice the ureter was dilated and tortuous, and the pelvis of the corresponding kidney much dilated. The proximal end of this ureter was freed from the surrounding tissues, until it could be brought to the collapsed bladder. A small opening was made into the bladder, into which was thrust about half an inch of the ureter. The bladder about the ureter was then carefully sutured to the sides of the ureter with interrupted sutures of fine silk. The sigmoid flexure was also involved in the tumor, the removal of which necessitated a few stitches of silk to close the hole made in that viscus. The convalescence was uneventful and recovery complete.

**Cause of Cancer.**—When the parasitic theory in regard to the etiology of cancer was advanced several years ago, it was believed that much of the mystery surrounding this condition would soon be dispelled and methods of treatment much improved. The results of years of investigation have been, however, very unsatisfactory and the physician is still groping in the darkness of speculation. P. R. COOPER (*Med. Chron.*, Dec., 1900) believes that too much attention has been paid to the parasitic theory, not because it is improbable or impracticable, but because the relation between the physiological growth and the pathological overgrowth of proliferating tissue cells has been overlooked. Instead of wondering why the cells in certain parts of the body should become multiplied so fast and extend beyond their normal bounds, it should really astonish us more to see how cleverly Nature normally governs cell-proliferation, so that in the natural growth, maintenance and repair of the body, in spite of the rapid reproduction of cells, the development of each one is so controlled that it

passes through a series of differentiating stages and, finally, as a mature cell assumes its particular function. Undoubtedly, cancer cells are in some way developed from the normal growing cells of the tissue in which the tumor appears. Cohnheim believed that the fetal inclusion of embryonic cells was responsible for the later abnormal overgrowth, but this theory is unnecessary. Normally, cells of an embryonic type, possessing powers of reproduction, exist in nearly all parts of the body and the microscope reveals all the intermediate stages between this "mother cell"—"histogenic cell"—and the active adult cell. The typical cancer cells resemble very closely their embryonic prototypes, but instead of the activity of the reproductive process being governed by the needs of the body, the formation of new cells is apparently without any definite purpose or direction. The newly-formed cells are devoid of any tendency to development and the more malignant the tumor the more embryonic they remain. The cell increase goes on unchecked and healthy tissues are invaded. In simple tumors and inflammatory conditions, however, excessive production of cells occurs, but they undergo development and never transgress normal boundaries. The essential difference between the normal histogenic cell and the one which produces the cancer cells seems to be that the latter has lost the capacity for development and differentiation. This "integrating" power which is, doubtless, transmitted through the nucleus may have been faulty from the first and malignant tumors of infancy or childhood may result. Again, it may be easily exhausted by a number of extra demands such as a chronic irritation, and cell-proliferation would then result in the accumulation of embryonic or malignant daughter cells.

**Membranous Colitis.**—This may be primary, due to enteroptosis, bacterial fermentation, infection, lack of digestive ferments, or intestinal calculi, writes JOHN A. ROBISON (*Medicine*, Jan., 1901), or secondary, due to dyspepsia, traumatism, and grave cachectic conditions, septic and infectious diseases, and cancer. The patients are usually over twenty, mostly women, small-boned, neuropathic, pale, and seldom bed-ridden. The skin is moist and is subject to eruptions, urticaria, eczema, etc. Insomnia is marked and the sleep of early morning may be disturbed by frequent movements of the bowels. The tongue is dry, thickly coated, the gums spongy, the breath foul, and nausea without vomiting is frequent. The stools are thin, watery, sometimes bran-like, foamy, and at times large quantities of mucus, or membranous shreds are present. Tenderness along colon, cramps relieved by heat, but not by pressure, and rectal tenesmus are common. The urine is scanty, high-colored, containing indol. Renal insufficiency is marked. The act of defecation is often painful, and may be accompanied by griping pains, prolapse of the bowel and the passage of blood and mucus. In most cases the diet should be nourishing, well cooked, and tempting. A flannel abdominal bandage should be worn. The patient should be free from care, and take light exercise in the open air. If the kidneys are not acting, give saline diuretics, alkaline waters, hot-air baths, etc. Great relief may be obtained from rectal flushings with warm water, one-per-cent. boric acid or salt solution, or 1-to-2000 silver nitrate. The author values rectal injections of methylene blue, one grain to a quart of water. The antiseptics useful for the bowel are bismuth salicylate, salol, betanaphtol, thymol, benzoic acid, menthol, guaiacal carbonate, and creosote.

## THERAPEUTIC HINTS.

**Lateral Curvature of Spine.**—Direct general muscular exercises alone, writes CHISOLM WILLIAMS, do harm in most cases, so treatment is directed to (1) the general condition; improved by fresh air and food, and as a rule fresh clothing made to allow chest development; also hypophosphites, cod-liver oil, and bland preparations of iron; (2) getting the spine straighter by manual and mechanical pressure, Barwell's rachilysis, Barwell's lateral sling, Volkmann's sloping seat, and weight pressure; (3) keeping the improved position by a Chance adaptable metal splint; (4) special exercises for each weak muscle or group of muscles until the spine is straight, then general exercises to keep it so; (5) massage, galvanism, and rubber exercisers. Under the age of five years a leather or gutta-percha splint, suitably padded, is sufficient to overcome the curve.—*Pediatrics.*

**Massage of the Stomach.**—According to GUSTAF NORSTRÖM, on account of the deep situation of the stomach and the slight resistance of the deep plane on which it rests, only a limited portion of the viscus can be reached in dorsal decubitus. For dilated stomach the author kneads at first from left to right with patient on back, the knees bent and head raised. After a few minutes he has patient lie on right side, and petrissage is performed with both hands alternately, from pylorus toward cardia. Gentleness is necessary during the séance. The sittings should last about fifteen minutes for stomach alone, and as much more time for the intestine, if there is constipation. They should begin two or three hours after a meal. The benefit most often shows first by a returning appetite, then by the disappearance of the rumblings, eructations, gastric pains, headache, vertigo, etc. At the beginning of treatment the diet must be light and limited in quantity. Besides dilatation of the stomach, massage is of benefit in chronic gastritis, dyspepsia, essential gastralgia, gastralgia due to neurasthenia or anæmia, pyloric cramp, etc., but it may do harm in ulcers or tumors of the pylorus.

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**SATURDAY, FEBRUARY 16, 1901.**


## BELLEVUE, THE GRAND JURY AND THE MEDICAL BOARD.

To lay blame, and plenty of it, on Bellevue and everybody connected with it, is at present the function of the reform party and the privilege of the newspaper man. We do not withhold blame, having freely expressed ourselves in the columns of the MEDICAL NEWS on the deplorable mismanagement of the city's hospital; but we do discriminate in the matter of laying it on.

Possibly the Grand Jury, in its laudable and efficacious words of censure, were more anxious that the facts should be brought to light, than careful on whom they put the responsibility for the condition of affairs.

The Grand Jury holds the Medical Board directly responsible for the administration of Bellevue. This unfair implication shows utter lack of knowledge of the real method of Bellevue's management. It is because the Medical Board has had no authority, without the approval of the Commissioner, that the hospital has been so mismanaged. The very abuses which the Grand Jury lays at the door of the Medical Board have been repeatedly presented to the Commissioner in reports by the Medical Board, and have been received with delayed attention.

The Commissioner has replied that there was not money enough to carry out the suggested reforms. Now that the city's attention has been aroused, lack of funds cannot longer be made an excuse.

The Grand Jury's presentment has at least had the effect of making the Commissioner agree with the Medical Board that there are abuses to reform; and has outlined the deplorable state of affairs which is only too familiar to every physician who has ever served on the staff or board of Bellevue.

The reception office is utterly inadequate to the demands made upon it. The sober, the intoxicated, the very sick and the fatally injured of both sexes must be received in a room that is too small and by physicians who must not only examine and distribute the patients, but do the clerical work of admission as well. The Medical Board ask for a suitable room, and a clerical assistant to take histories.

The Insane Pavilion, from which the first scandals issued, falls between two stools in its management. The attending physicians are paid by the city, and are not under the control of the Medical Board, and the staff physicians, who are held responsible, have had no training in the treatment of the insane. It is asked that there be a competent, well-qualified physician with a suitable salary who would devote his time exclusively to their care, and an assistant resident physician, so that the Insane Pavilion would never be without some expert physician directly responsible for its management. The nursing service of the male ward of the Pavilion should be in the charge of a carefully-selected supervising graduate nurse, assisted by trained attendants, and there should be separate wards for alcoholics and epileptics.

The dispensary is described by the Medical Board as being in a "state of vicious decay," and needs a paid superintendent who will see that the appointees attend to their duties regularly, and that the pilfering of medicines, bandages, and instruments be made to cease.

The accommodations for the paid help are miserable and dirty, and for the nurses and resident staff they are wholly insufficient. The attitude hitherto toward this state of affairs has been that reform needs money, and, the money not being forthcoming, the abuses must be considered as non-existing. Now that everybody, Commissioner, Medical Board, and staff frankly and freely admit them, the question remains, Will the

city give the money and reform the management?

It is a disgrace to New York to think that Bellevue has such a low *per capita* allowance, compared with that of any private hospital in the city. The ratio is $1.21 per day against an average of $1.98 for each patient in other hospitals. The Medical Board say on this subject: "Decent service requires fair pay and decent accommodations. To which end we earnestly recommend that the main hospital building be replaced by a modern and commodious structure, and that the *per capita* allowance for conducting it be increased to a figure approximately that under which other hospitals live."

As Bellevue cares for more patients during the year than all the large private hospitals in the city combined, it is most important that, if its funds be increased, they should be properly managed; and we can but reiterate what we have said very emphatically in a previous issue of the MEDICAL NEWS, that we hope the Charity Commission reform will be carried through and the management of Bellevue be vested in a Board of unsalaried trustees, as outlined by the Charter Revision Committee.

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### DISINFECTION OF THE URINE IN TYPHOID FEVER.

ALTHOUGH it has been known for some time that the bacillus typhosus may be present in the urine of typhoid fever cases, it is only very recently that the frequency of its occurrence here has been appreciated by investigators. As yet, this knowledge can scarcely be said to be universal in the medical profession. Judging from the bacteriological observations of Blumer, Wright, Besson, and Petruschky, upon the urines in typhoid fever, but more particularly upon the more comprehensive and recent work of Horton Smith, Richardson, and Gwyn, it is probable that in at least 30 per cent. or more of the cases typhoid bacilli are present in some stage of the disease; some estimate their presence as high as 50 per cent.

In most of the cases the bacilli appear in the urine generally toward the second or third week of the disease and soon disappear; but evidence seems to show that in only about ten per cent. of the cases do they persist throughout convalescence. In many cases they have already been shown to be present in the urine for periods of months; indeed, in one case reported by Houston the typhoid bacilli had existed in the urine for several years. Ordinarily they are present in pure culture and often in great numbers; despite this there may not be any change in the appearance, or composition of the urine, nor need there necessarily be any appreciable lesion in the kidneys or elsewhere in the urogenital tract. Sometimes, however, signs of cystitis or renal implication are noticeable.

Realizing the possibilities of spreading the disease through this source, the Board of Health of New York City has had circulars printed calling attention to the importance of proper disinfection of the urine in typhoid fever. The disinfection of the urine should be continued at least until health is completely restored. Almost any of the standard germicidal solutions may be employed for disinfection, carbolic-acid or bichloride-of-mercury solution will be found safest. Urine to which has been added one-third of its volume of a one-to-twenty solution of carbolic acid is thoroughly disinfected in a few minutes.

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### THE STATE BOARD OF CHARITIES.

THE bill to abolish the State Board of Charities, and substitute a Commission of three persons to perform their duties virtually means abolishing anything like regular inspection of the charitable institutions of the State which are supported in whole or in part by public funds. Economy is a very laudable virtue, but it is a short-sighted economy that substitutes a political office for an old, well-ordered and proved system. As the *New York Evening Post* says in commenting on the proposed bill, "The members of the State Board of Charities and their employées acquire knowledge with each visitation. They accumulate their experience and record it. As they serve without salaries, and are themselves tax-payers, they have every motive to insist upon good and economical service. The last thing that the average politician thinks of is the saving of money for the State. If the Board of Charities is abolished it is almost certain that more will be spent in the State's charitable institutions than now, and that the inmates will get less value for it."

The problem before the State is not merely how to board and lodge at a minimum cost, the 60,000 bodies that are either socially defective or helplessly dependent; but how to order, discipline and repress them to their mutual advantage and the good of the State.

The State of Maine has tried to save expense

by refusing to create a State Board of Charities, and each town has provided for its paupers as it has seen fit. The happy thought of marrying female paupers to male paupers in other towns resulted in the union of two half-witted individuals. But when the bridegroom brought his wife from her almshouse to his, the one town sued the other for fraud, and it is said that the costs of the litigation have been "enough to take care of all the paupers and keep the town roads in good condition besides." We do not desire to imitate the example of Maine; nor do we desire to have our pauper bills miraculously increasing for lack of efficient inspection, and lack there will surely be if the present bill goes through.

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### THE SMALLPOX SITUATION.

LAST year about this time there was considerable discussion in medical circles because of the number of cases of smallpox in the United States. It was said that to avoid a serious epidemic great care and watchfulness would be needed. At the present time we have more than three times as much smallpox in this country than we had at the same time last year.

During the four weeks from December 29, 1899, to January 26, 1900, 1,064 cases of smallpox were reported to the Surgeon-General of the United States Marine Hospital Service. During the four weeks from December 28, 1900, to January 25, 1901, 3,212 cases have been reported.

The increase of the disease affects nearly every State in the Union. Only Louisiana and Tennessee have a notably smaller number of cases of the disease than last year. Many States and Territories are suffering from serious epidemics of smallpox. In Nebraska, 464 cases are reported as compared with 6 cases during the corresponding period of last year. In Oklahoma there are 401 cases reported where there were but 55 last year. Minnesota reports 362 cases; Kansas, 280; Ohio, 225; Virginia, 206; Utah, 192; Texas, 125. New York State reports 60 cases, while during the corresponding period of last year there were but 2 cases.

The reasons for this increase of smallpox are not difficult to find. Freedom from serious epidemics of the disease for nearly 20 years has begotten a false sense of security as to the danger it involves. Gradually the persuasion has gained ground that, under the improved sanitary conditions of our modern life, smallpox is no longer the dangerous contagious disease that it used to be. The necessity for vaccination has been denied by many. Revaccination has been very generally neglected. As Professor Osler has said in a recent review of the Medicine of the Nineteenth Century, "The difficulty (the unfailing recurrence of smallpox in this country) is due to the constant presence of an unvaccinated remnant by which the disease is kept alive. Besides this, too, the protective power of the inoculated cowpox is not a fixed and constant quantity. The protection may be for life or it may last only for a year or two."

The neglect of revaccination is the cause of the present situation. From all over the country come reports that the cases of smallpox occurring at the present time are many of them atypical. They are milder and begin insidiously without certain of the characteristic symptoms of genuine smallpox It is only from a series of cases and from fully-developed cases that the diagnosis of the disease becomes assured. These anomalous types of smallpox are due to the incomplete protective power of old vaccinations. A sufficient degree of immunity remains to modify the virulence of the smallpox, but not to prevent its occurrence. Smallpox is eminently a disease of the winter. This year our wintry weather has been very much delayed. That we shall have considerable cold weather, some of it for continuous periods of good length, seems certain and it is at such times that smallpox spreads with special epidemic virulence. Last year during the six months from January to July, 1900, there were over 14,000 cases of smallpox in this country. Thus far there have been three times as many cases as during the corresponding period of last year. If this same proportion should continue there will be over 40,000 cases in the first six months of 1901. It is not probable that the ratio of increase of the disease will thus continue, for already the people of the country have been aroused to some sense of the danger. Vaccination and revaccination have been taken up with a proper confidence as to their protective influence. There are still parts of the country, however, where neglect of these precious precautions is still the rule. In such places it is the plain duty of the medical profession to call the attention of communities to the dangers that threaten them and to which they are exposing others. For when smallpox becomes epidemic it takes on renewed virulence that enables it to attack even those who were before proof against its attacks.

As Professor Osler says, "Efficiently vaccinated persons may be exposed with impunity to smallpox. To be efficient, vaccination must be carried

out systematically and, if all the inhabitants of this country were revaccinated at intervals, smallpox would disappear as it has from the German army, and the necessity for vaccination would cease." Professor Osler is not as those who talk knowing not. His experience with smallpox in Montreal gives his words all the authority of an expert on the subject. Those who from the depths of their ignorance and prejudice are discouraging the practice of vaccination are almost criminal in the possible harm they may do and under present circumstances are actually accomplishing. Nothing but an almost universal recurrence to vaccination and revaccination will save this country from a serious and extremely costly epidemic of smallpox during the coming cold weather.

Let the medical profession at least do its duty by timely advice in the matter. There is nothing at the present moment that is more worthy of strenuous effort and careful attention.

## ECHOES AND NEWS.

### NEW YORK.

**Harlem Hospital Appointments.**—Dr. John J. McGrath has been appointed to the position of attending surgeon to the Harlem Hospital.

**In Honor of Dr. Green.**—The New York Academy of Medicine last week honored the memory of Dr. Horace Green, the celebrated specialist on laryngology. A life-size marble bust, which was made in Italy, was unveiled at the Academy last Thursday week. The bust is a gift to the Academy of Medicine from Dr. Green's widow and his son, George Walton Green.

**German Hospital.**—The thirty-first annual report of the Board of Trustees of the German Hospital and Dispensary of this city, which has just been made public, describes in detail the work that has been done during the year 1900 toward the erection of an annex to the hospital, at Seventy-seventh Street and Park Avenue. This annex is now in course of construction. It will accommodate seventy patients, and, according to the estimates given in the report, will cost $180,000. It is expected that the building will be completed next June.

**New York Academy of Medicine.**—At the Tuesday, February 19th, meeting of the Section on Medicine, there will be a Symposium on Pleurisy. The following papers will be read: "Cytodiagnosis; Its Applicability to Pleurisy," J. J. Walsh, M.D.; "The Bacteriology of Acute and Chronic Pleurisy," by Alexander Lambert, M.D.; "The Treatment of Pleurisy with a Consideration of Early and Late Tapping," by C. E. Nammack, M.D.; "The Use of Methylene Blue Injections in Pleurisy with Effusion," by C. H. Lewis, M.D.; "The Routine Treatment of Pleurisy at Mt. Sinai Hospital," by Julius A. Becker, M.D. General Discussion of the papers by Drs. I. Adler, M. Manges, H. Lilienthal, S. S. Burt, and others.

Thursday, February 21st, Dr. A. J. Lartigau will read a paper "On the Rôle of the Colon Bacillus in Human Affections," to be discussed by Drs. Biggs, Parks, and others.

**East Hampton's Typhoid.**—The typhoid outbreak at East Hampton, L. I., last summer has been investigated for the State Board of Health by Professor Landreth of Union College. He finds that the cause was the proximity of Camp Wikoff. The first results in the village of the intercourse, he says, were numerous cases of tropical dysentery during the fall of 1898. Later in the year there were a few typhoid cases, and in 1900 several other cases occurred within 600 feet of the site of one of the hospitals where several soldiers were sick with typhoid during the summer of 1898. The report says there is little doubt that typhoid became established at East Hampton by soil implantation, and that it was disseminated either through the agency of percolation or through the air. Professor Landreth says that unless vigorous sanitary measures are taken there is a prospect of the disease developing into an epidemic from the existing centers during the coming season.

**New Hospital for Red Cross.**—The New York Red Cross will erect a hospital and training school on a plot of four lots in Central Park West, 24 feet south of One Hundredth Street, which has just been bought by the Society for $100,000. The plans, drawn by Woodruff Leeming, provide for a key-shaped building, with the longer elevation fronting the Park, and estimated to cost $60,000. The hospital is to be six stories in height and to contain 100 beds, including one reserved for each nation represented in the Red Cross. The training school for nurses is to be four stories high. The building will be of steel construction, fire-proof, and will have electric elevators and every modern hospital appliance. The New York Red Cross, whose home now is at 259 West Ninety-third Street, was organized in 1894. Its officers are: William T. Wardwell, President and Treasurer; Mrs. George F. Shrady, Vice-President; Thos. A. McNicholl, Secretary; Mrs. Bettina A. Hopker-Lesser, Sister-in-Chief; Dr. A. Monae Lesser, Executive Surgeon, and Francis Barker, President of the Managing Sisters.

**Bell Bill Amendment.**—The amendments of the Bell Bill have been agreed upon at a meeting of the Legislative Committees of the New York State Medical Society, the New York State Medical Association, the New York County Medical Association, with Assemblyman Bell. The Bell Bill made it a misdemeanor for any person to recommend or advise any person to take any medicine or undergo any kind of regimen or treatment whatsoever; the Bill was designed to reach

the Christian Scientists, but the New York State Medical Association opposed it on the ground that "in its original form it would have made the citizen liable under the law for recommending any mineral water or prescribing a hot-water bath or any simple remedy." Dr. Harris said that the great objection lay with the definition of what constitutes a practitioner of medicine. The amendment now reads: "The construction of this article is that any person shall be regarded as practising medicine within the meaning of this act who shall give treatment to any other person by the use of any remedy, agent, or method whatsoever, whether with or without the use of any medicine or instruments, or other appliances for the relief or cure of any wound or fracture, bodily injury or infirmity, physical or mental disease."

**Report of Lunacy Commission.**—In its annual report, just submitted to the Legislature, the State Commissioner in Lunacy says there were admitted to the State hospitals last year 4,795 new cases of insanity, a marked increase as compared with 4,201 the preceding year. The net increase, however, at the close of the year was but 714. There were 1,029 patients discharged recovered during the year and 900 discharged sufficiently improved to enable them to return to their homes and to engage in regular employment. A gross reduction of $297,171 was made in the cost of maintenance of the 22,000 insane supported during the year, the *per capita* rate having fallen from $3.43 to $3.18 per week. The amount spent for new buildings and extraordinary improvements last year was $662,948, as against $1,126,043 for the preceding year. There was collected during the year from paying patients $210,851. There was expended for salaries and wages of employees in the State hospitals $1,442,001. The total value of real estate of State hospital buildings is $21,600,000, while the personal property is valued at $1,670,000. The balance of the million-dollar appropriation for new buildings and extraordinary improvements, granted by the Legislature in 1900, will be required to finish the new colony at Central Islip, including accessory buildings.

## PHILADELPHIA.

**The Protection of Water Supplies.**—The Association of Health Authorities and Sanitarians of Pennsylvania at their annual meeting asked of the Legislature the passage of a bill embodying the following points: (1) Providing that constables shall be health wardens and receive $10 for each conviction of pollution of streams; (2) making it compulsory for school boards to organize local boards of health; (3) appropriating $15,000 to the State Board of Health for the supervision of water supplies and the protection of public streams against pollution.

**Board of Health and Anti-Vaccination Bill.**—The Board of Health met in special session February 11th to protest against the passage of the Anti-Vaccination Bill now before the Legislature. Many prominent physicians were present to declare their opposition to the repeal of the present law. The following action was taken: "*Resolved*, That the Board of Health of Philadelphia earnestly protests against the repeal of Section 12 of the act adopted by the Legislature of Pennsylvania, June 18, 1895, which requires that the fact of successful vaccination or a previous attack of smallpox, as the case may be, must be duly certified before a child is admitted to any school in the State."

**Camps for Consumptives.**—Dr. J. T. Rothrock, State Forestry Commissioner, has outlined plans and secured subscriptions for the establishment of camps for consumptives on State reservations. The first camp will probably be opened in Clinton County, which has an elevation of 2,000 feet above the sea-level. Large A-tents will be erected with permanent foundations. The tents will have heavy wooden floors, and a covered platform, on which the occupants may take exercise during rainy weather, will extend in front of each row of tents. Patients will be furnished with shelter free of charge, but will have to make their own cooking arrangements. The intended ultimate result of these plans, which will soon be presented to the county medical societies of the State, is the establishment of consumptive camps on every healthy forest reservation in the Commonwealth.

**College of Physicians.**—The meeting of February 6th was opened by Dr. J. Chalmers Da Costa with an eloquent address in memorial of the late Sir James Paget, who was an honorary member of the College. Drs. J. F. Schamberg and J. F. Wallis exhibited wax models illustrating various cutaneous diseases. Dr. B. Alexander Randall read notes on fifty cases of otitic extradural abscess. Dr. John B. Roberts exhibited a cast and skiagraphs of Smith's fracture of the radius and Bennett's fracture of the metacarpal bone of the thumb. These specimens were from Dublin and will be deposited in the Mütter Museum. Dr. H. R. Wharton reported for himself and Dr. J. H. Musser the history of a case of perforating ulcer of the stomach, with recovery following operation six hours after perforation. The perforation was closed by infolding it, the abdominal cavity irrigated with six gallons of hot salt solution, and two glass drainage-tubes inserted, one reaching to the pelvis. Dr. Wharton believes irrigation and drainage of the pelvis to be two important points in the treatment. If the pelvis cannot be reached by a tube a counter-opening should be made.

**Organotherapy in Gynecology.**—A spirited discussion of this subject, based on a paper read by Dr. Wilmer Krusen, was held recently at the Obstetrical Society. The paper referred to uterine, mammary, parotid, thyroid, and ovarian extracts. Thyroid has been most thoroughly tried by various observers and is the most efficient. For the past three years Dr. Krusen has been prescribing ovarian extract in three classes of cases, *viz.*, (1) amenorrhea and dysmenorrhea; (2) symptoms fol-

lowing the removal of the uterine appendages; (3) disturbances accompanying the natural menopause. No favorable influence has been noticed in the first class of cases. The best results are obtained in the second class, the congestive and nervous symptoms being distinctly ameliorated in some cases. He concludes that no definite and exact reliance can be placed on the remedy, its use being disappointing in many cases, though an occasional good result incites to its renewed use. Dr. H. A. Hare discussed organotherapy from a theoretical point of view. He believes that to form definite conclusions regarding the value of mammary-gland extract there must be a knowledge of the physiological or sexual condition of the animal from which it was obtained. Many of the present contradictory reports of its efficacy may be due to a lack of such knowledge. Again, the physiology of minute metabolism is not known. This may be different in different individuals and similar conditions or symptoms may arise from different causes in each. For this reason, also, the use of organic extracts will give conflicting results. A third point is the fact that the reporting of such gratifying results by some observers rather militates against a favorable impression of these remedies. This statement is made because of the well-known fact that from time to time enthusiasts report remarkable results from the use of certain drugs which the profession at large find of no particular value whatever in the class of cases specified. The use of parotid-gland extract in ovarian disease is not known to have a rational basis. The involvement of the ovaries in some cases of mumps may mean, not a physiologic connection, but a bacteriologic similarity between the organs at fault. The connection between the ovaries and the mammary glands is possibly only a reflex one. For these reasons organotherapy cannot be employed in a rational way until symptoms can be separated and their cause more definitely located in individual cases. Dr. W. W. Russell of Johns Hopkins University stated that organotherapy had proven practically valueless in his experience. The local use of suprarenal extract gave gratifying results in a case of hemorrhage from the kidney which had for nine months been treated unsuccessfully. Through a renal catheter, one-half ounce of a 10-per-cent. solution was injected into the kidney. This was done three months ago and there has been no hemorrhage since. Dr. E. E. Montgomery finds thyroid extract of service in women who have rather rapidly become obese, a diminution in flesh often being followed by a recurrence of pregnancy. This remedy has a certain value in the irregular bleeding of women who are near the climacteric. It also exerts a favorable influence on malignant disease by modifying the pain. Dr. J. G. Clark has for three or four months systematically used extract of parotid gland in cases of dysmenorrhea, with thus far not the slightest result. Dr. John C. Da Costa obtains rather uniformly-favorable results from the use of thyroid extract in patients with uterine fibroids who refuse operative treatment. When this substance is given in combination with nux vomica the fibroids often decrease in size, temporarily at least, and in some instances hemorrhage ceases.

## CHICAGO

**Gifts to Wesley Hospital.**—Dr. R. D. Sheppard of Northwestern University has received donations to Wesley Hospital, one of $5,000 and one of $1,000. The names of the donors will be announced when the dedicatory exercises of the additions to the old hospital are held in May.

**Decline of Smallpox.**—The situation at present in regard to smallpox is reassuring, inasmuch as no new case has been detected during the first four days of this week. The record of no case among the recently-vaccinated is still unbroken, and this lesson is causing a resort to vaccination which is the best assurance against any serious epidemic spread of the malady.

**Electrocution for Criminals in Illinois.**—A bill to make electrocution the legal method of execution in Illinois was introduced into the Legislature recently by Representative D. E. Sullivan of Chicago. If the bill becomes a law, the death penalty will be administered in the Joliet Penitentiary and the warden or such assistant as he may designate to officiate will receive $50 for ending each human life. The method of death is thus specified: "When a defendant is sentenced to the punishment of death, the mode of executing the sentence must in every case be by causing to pass through the body of the convict a current of electricity of sufficient intensity to cause death, and the application of such current must be continued until such convict is dead." Should the bill become a law it will apply only to murderers whose crimes are committed after its passage. It is believed that this method of executing criminals in Illinois will not meet with favor among intelligent students of criminology. If the State is to continue to inflict the death penalty for the commission of certain crimes, it should adhere to the rope and the scaffold as the most effective and impressive reminder of the terrible retribution that follows the taking of human life. Hanging as a death penalty was instituted for the purpose of impressing the public mind with the horror and disgrace of crime. Nothing could be more revolting or shocking to public sensibility than the hanging of a man by the neck with a rope until he is dead. It has a traditional terror for criminals. It invests crime with an awful aspect, and the more odious and dreadful it can be made the better for human society.

## GENERAL.

**Smallpox at Glasgow.**—Up to the first of February there were 385 cases of smallpox in this city. This number is increasing daily. Last week, February 6th, 453 cases had been reported.

**Death of Professor Von Pettenkofer.**—Professor Von Pettenkofer, the well-known hygienist, who was eighty-three years old, has committed

suicide by shooting himself with a revolver. He suffered from melancholia.

**Plague at Cape Town.**—Nine new cases of the bubonic plague are reported here and in the suburbs. A child has died of the disease. The Government and the local authorities are taking strong measures to confine and suppress the outbreak.

**Plague and Smallpox at Manila.**—Three cases of plague and seven cases of smallpox were discovered in Manila last week. The appearance of these diseases causes no alarm to the Health Board, which is prepared to control their annual visitation, which is expected during the hot season.

**Christian Science in Indiana.**—Senator Wood introduced a bill in the State Legislature February 6th making it a felony punishable by imprisonment in the penitentiary where Christian Scientists treat cases of illness and death results. The purpose of the bill is entirely to exclude the practice of Christian Science from Indiana.

**Medical Society of the Missouri Valley.**—The semi-annual meeting of this Society will be held in the City of Omaha, on Thursday, March 21st. Those desiring to contribute to the programme of the spring meeting will please notify the Secretary of their intention at once, as papers will be assigned to a position in the order received.

**Plague in Siberia.**—The *Daily Mail* publishes the following from its St. Petersburg correspondent: "Serious reports are in circulation here regarding the outbreak of what was first called 'hunger typhus,' but is now officially admitted to be bubonic plague in the Khirghiz Steppes of Western Siberia. Many thousands have died in the districts between Semipalatinsk and Orenburg. The Government is sending large quantities of wheat to be distributed to the starving population, and is organizing traveling medical services to localize the outbreak."

**Death of Dr. Hiram Christopher.**—At the meeting of the St. Joseph (Mo.) Medical Society, January 22d, the following resolution was adopted: *Whereas*, it has pleased God, in His infinite wisdom, to call from our midst Dr. Hiram Christopher; therefore be it *Resolved*, That we express our heart-felt sympathy and sorrow at the loss of a most honored member of this Society, and of a most lovable confrére in the profession. *Resolved*, That we mourn, with the community, the demise of a fellow citizen of high literary attainments, deep moral sense, and public spirited disposition, and, be it further *Resolved*, That as a mark of respect to the memory of the deceased, this Society adjourn. M. F. Weymann, Jacob Geiger, Chas. Wood Fassett, Committee.

**Prize Essay on the Dangers from Quackery.**—The Colorado State Medical Society offers a prize of twenty-five dollars for the best essay, if deemed worthy of the prize, pointing out the dangers to public health and morals, especially to young persons, from quackery as promulgated by public advertisements. The competition is open to all. Essays must be typewritten in the English language, and submitted before May 15, 1901. Each essay must be designated by a motto; and accompanied by a sealed envelope, bearing the same motto, and enclosing the name and address of the author. The essay receiving the prize will become the property of the Society for publication. Others will be returned on application. Essays should be sent to the Literature Committee, Room 315, McPhee Building, Denver, Colorado.

**Christian Scientists in Massachusetts.**—Christian Scientists have succeeded in safely running the gauntlet of a good deal of legislation at the State House in years past, but this year a bill has been introduced which is aimed at them directly, as well as at clairvoyants, persons practicing magnetic healing and mind cures. The bill aims to have inserted in the present medical law (chapter 458 of 1894) a new section providing that "whoever, not being registered, shall advertise or hold himself out to the public as a healer of disease, or able to abolish disease or the symptoms of disease, or as competent to do surgery, or shall in any way treat or prescribe for the sick or injured for gain, shall be punished by a fine of not less than $100 or more than $500 for each offense, or by imprisonment in jail for three months, or both."

**History of Plague on the Steamship "Friary" at Hull.**—The history of the last voyage of this vessel, as given in the Marine Hospital Reports, that she cleared from Cardiff November 17th for Alexandria, Egypt, where she took on a cargo of cotton seed. She left that port December 22d, touching at Algiers December 30th, and reached Hull January 10th. January 8th a Greek sailor became ill and died just before the vessel reached port. The port sanitary officers visited the vessel and, after a careful examination of the body and from the history of the case, decided that he had died from "natural causes" and allowed the vessel to proceed to dock. It was thought at the time that the man had died from influenza. Saturday, January 12th, two sailors were ill and applied to the port sanitary officers for treatment, and they were also treated for influenza. One man died on the 13th and the second one the next day, and suspicions were aroused that the disease was not influenza. Two more sailors becoming ill were sent to the hospital and died, and Wednesday, January 16th, the vessel was taken away from dock and anchored in the stream, and all the crew confined on board or sent to hospital. Besides the two men who died in hospital, three others were ill and sent there, but they are convalescent without a positive diagnosis. So far as known, all cases of plague have died. A postmortem was held on the first death in hospital and the

diagnosis of plague confirmed. In one instance, the plague bacillus was found in the lung in almost pure culture. It would seem safe to suppose, therefore, that the five deaths from among this crew were all from plague. The symptoms in all cases were indefinite, and suggested influenza. There was fever, and general aches and pains, some cough, but very little expectoration, and not the usual pneumonic symptoms. In no instance was there any glandular enlargement. The danger from this vessel lies in the fact that she came to dock and was there for several days, and was visited by numerous people, while three of the men died on board of her. One of the physicians who had attended these cases has been ill, but a diagnosis has not been made. As regards the source of infection on board this vessel, the most probable source would seem to be Alexandria, although this port at the time of sailing of the "Friary" was supposed to be free from plague, and clean bills of health were being issued. However, the period that elapsed from the time of leaving Alexandria, December 22d, to the time of sickness of the Greek sailor, January 8th, is longer than the usual incubation period of plague. Inquiries made concerning rats showed that two dead rats had been found on board, and a cat that came on board in Alexandria became ill, but unfortunately was thrown overboard in the Humber, so no bacteriological examination was possible.

**Obituary.**—Dr. William H. Edsall died in Highland Falls, N. Y., last week, aged forty-nine years. He leaves a widow and daughter. He was an active member of the Knights of Honor, Knights of Pythias, Foresters and Odd Fellows. He was a prominent Democrat and has served as health officer for a number of years.

Dr. Benjamin Franklin, a native New Yorker, who for a quarter of a century practised medicine in Newark, died last week at his home, 121 Fifth Avenue. Grip caused his death. Dr. Franklin was a veteran of the Civil War, and was a prisoner for seven months at Andersonville. He also served with the Cuban patriot army in the ten-year war in Cuba. Dr. Franklin was fifty-four years of age and a graduate of the University of New York. A widow and four daughters survive him.

Dr. Samuel Clagett Busey, one of the oldest and best known physicians of Washington, died in that city, Tuesday, Feb. 11th. He was born in Montgomery County, Maryland, in 1829. He was professor of materia medica at Georgetown University for many years and was the author of 163 contributions to medical literature. He also contributed to the historical works on the District of Columbia.

Dr. Peter M. Barclay, one of the eminent physicians of the Hudson River Valley, died last week at Newburgh. He was sixty-eight years old. A widow and married daughter survive him.

Dr. Frank Bond died at his residence, 27 Schermerhorn Street, Brooklyn, last Sunday. Dr. Bond was born in Erie County, Penn., in 1827. He was left an orphan while he was a mere child. When he was thirteen years old he became a farm laborer and received very little schooling until after he was twenty. He prepared himself for a university course, and finally entered Williams College in 1850. After being graduated from Williams College in 1854 he went to Iowa with the intention of teaching school. About this time his attention was drawn to medicine, and he began a medical course of study under Dr. Sanders of Iowa City. In the winter of 1855-6 he attended lectures in this city. While attending the medical lectures Mr. Bond married. After graduation he settled in Brooklyn, where he since resided. Dr. Bond is survived by his widow, one son, and a daughter.

Dr. M. G. Cunningham, a prominent physician of Binghamton, N. Y., died there Monday, February 11th. He was forty-eight years of age.

## CORRESPONDENCE

### THE DUTY OF THE PHYSICIAN AND LEGISLATURE.

*To the Editor of the* MEDICAL NEWS:

DEAR SIR: We have had a bill introduced in the Legislature of this State which is of vital importance to the medical profession, medical colleges and medical institutions, and to the public generally. This bill, if enacted into law, will compel every person who treats disease, regardless of the method they employ, to comply with the medical laws.

The necessity for the enactment of this bill seems very plain. Under an old decision of the Supreme Court of this State, in the case of Smith vs. Lane, it was held that unless one gave medicine he did not practise medicine. The result of this decision has been that people who have desired to evade the law have adopted some cunningly-devised name, as "osteopath," "hydropath," etc., and by refusing to give medicine have set themselves up as being competent to treat disease, and the authorities are not able to successfully prosecute them.

The present medical laws, as they are now enforced, are incentives to ignorant and unscrupulous people to adopt some peculiar name or title and so avoid the necessity of the careful preparation the law says a person should have before being allowed to practise medicine. The law only places obstacles in the path of those who desire to perfect themselves so as to be able to practise intelligently.

About three years ago the osteopaths had a bill introduced in the Legislature which sought to legalize their practice, but the measure failed.

They have this year attempted the same thing and their bill, which has been introduced, is stronger and has greater backing than before. It will seek to give to people who have not perfected themselves as physicians are perfected, the right to treat any and all disease by the method known as "osteopathy." If they gain this privilege it cannot be expected that other practitioners will be content to comply with the requirements of medical colleges, when they can obtain the same standing in the community by studying at some "osteopathic college." This latter course may not give them the same standing professionally, but it will enable them to rank as well, with the community, as the person who has received a thorough medical education.

Another bill has been introduced compelling the Regents to endorse the diploma of any physician who has passed the State Board of Medical Examiners of any other State. If this applied only to States where the requirements were similar, although inferior to our own, it would be bad enough; but it goes farther and applies to all States. Should this bill become a law students can then go to some State where the requirements are almost nothing, and, having received the right to practise there, can come to New York and be allowed to practise here. This will be an unfair discrimination against the medical colleges of this State, will make a farce of our medical laws, and certainly will not be of advantage to the community.

It seems to the writer that these are matters which should interest every person, physician or otherwise, who believes in upholding the present high standard of medical requirements in the State of New York, and who has the interest of the community at heart. We trust that they may interest you, and that you will use every honorable means at your command, first, to assist in the enactment of the bill known as the Bell Bill, compelling every person who treats disease, whether with or without drugs and medicines, to comply with the medical laws; second, to assist in the defeat of the Seymour Bill which would give a legal standing to a class of incompetent practitioners known as "osteopaths"; and, third, to assist in the defeat of the Adler Bill which seeks to let down the bars so that medical men of possibly inferior education and ability may be allowed to overrun the State of New York.

The writer is engaged in what he hopes will be considered a commendable effort to retain for the medical profession of the State of New York the proud position it holds in the eyes of the world to-day, and to insist that the Legislature will continue to protect the community from incompetent medical practitioners by compelling compliance with the medical laws as a prerequisite to practice.

FRANK VAN FLEET,
*Chairman of the Committee on Legislation of the Medical Society of the State of New York.*

New York, February 9, 1901.

## OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, February 2, 1901.

PLAGUE AT HULL—THE PNEUMONIC FORM MISTAKEN IN THE FIRST INSTANCE FOR INFLUENZA—FOUR DEATHS ON ONE STEAMER—CREMATION OF THE BODIES—THE CASUALTIES OF DEATHS FROM DISEASE IN THE SOUTH AFRICAN FIELD FORCE—THE FAILURE OF PHYSICAL EXAMINATION IN THE DIAGNOSIS OF PHTHISIS.

PLAGUE has made another attempt to invade Great Britain. A steamer which arrived at Hull on the 10th ult. from Alexandria on its way called at Algiers. The usual inspection of the vessel was made by the port medical officer of health and the body of a seaman who died shortly before the arrival of the vessel was removed to the mortuary. There was no sickness on board the vessel at the time of arrival, but on the 12th two of the crew became ill. The cases were diagnosed by the port medical officer and by another practitioner as influenza with lung complications. Two other members of the crew sickened on the 15th. All four have died. A bacteriological examination of the viscera of two of the patients was made by Dr. Klein and the result shows that the malady was plague. All the necessary precautions are now being taken in Hull and a medical inspector of the Local Government Board is inquiring into the matter. Altogether five deaths took place, one on the voyage, two in the docks, and two in hospital. Two of the bodies have been cremated and permission to cremate the other two is awaited. It is thought that the danger to the public is passed. The plague was of the pneumonic form.

Official tables have been issued showing the casualties and deaths from disease in the Army in South Africa. In February, 1900, the total British forces amounted to 194,000; in December to 210,000. Thus, roughly speaking, about 200,000 men were employed during the year. The total number of deaths from disease in 1900 was 7,501 which gives a rate of about 37.5 per 1,000. Those killed in battle and those who died of wounds in South Africa, 200 deaths from accident apart from battle, and 92 deaths of prisoners in captivity, when added together give a total of casualties for the year of 4,318 or a casualty death-rate of 21.6 per 1,000. If allowance is made for the invalids who died on the way home or after reaching England (whose deaths are excluded from the above list), it is probable that the death-rate from disease has been about double that from wounds. As to invaliding, 39,986 non-commissioned officers and men and 1,638 officers have been sent home as invalids, or 185 per annum per 1,000. Of the invalids sent home 5,662 were wounded, 30,243 were sick and concerning 1,081 the cause of invaliding is not specified. Of the invalids 243 have died, 1,570 have been discharged from the service as unfit, and 654 are in hospital. Comparing these returns with those of the Army in time of peace; the total death-rate of the field force during 1900

was 59 per 1,000; of the troops at home and abroad, 10.8. The four principal causes responsible for the high death-rate from disease were typhoid fever, dysentery, respiratory diseases and rheumatic fever, probably in this order of importance. Probably an annual death-rate of 10 per 1,000 was caused by typhoid fever alone. In the United Kingdom the death-rate from typhoid fever of the troops is about that of males of the same age in the civil population—0.26 per 1,000; in India from 1886 to 1895 the death-rate of the troops was 5.16; and in South Africa in time of peace, 1892 to 1896, 1.76.

In his recent Harveian Lectures on Consumption, Dr. Maguire, Physician to St. Mary's Hospital and to the Brompton Hospital for Diseases of the Chest, and one of the recognized authorities on chest disease, related the following case which has given rise to some comment on the fallibility of physical examination of the chest: A man came to the Brompton Hospital one day with unquestionable tuberculous ulceration of the larynx. He had also a cough and all the appearances and symptoms of advanced phthisis. But the most careful examination by Dr. Maguire and several medical men who were attending the clinic failed to find any but the most ambiguous physical signs in the chest. The case might have been looked upon as one of primary laryngeal tuberculosis, but Dr. Maguire was sure that it was not. On two other occasions at intervals of a fortnight the chest was further examined with the same result. But on his fourth attendance signs of cavities were found in almost every part of the thorax. The cavities could not have formed in a fortnight. Undoubtedly they were present at the first examination, but from blocking by mucus or from some other condition escaped detection. The moral of this case is twofold: First, negative results in the physical examination of the chest should not prevent a diagnosis of phthisis being made; secondly, a practitioner should not readily condemn one who has previously examined a chest and failed to find anything, although after a brief interval advanced signs of excavation are present.

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## TRANSACTIONS OF THE FOREIGN SOCIETIES.

### French.

FOREIGN BODIES IN THE ABDOMINAL CAVITY—INTESTINAL FISTULAE—HEMOSTASIS IN THE LIVER—OVARIAN HEMORRHAGE—PYLORIC STENOSIS—TYPHOID PERFORATIONS—THE BLOOD IN CANCEROUS PATIENTS—LYMPHADENOMA AND LEUCEMIA—EARLY CEREBRAL SYPHILIS—FISTULAE AND TUBERCULOSIS—TUBERCULOSIS AND THE HEART.

CHAPUT, at the Société de Chirurgie de Paris, December 12, 1900, related the facts of a case in in which a gauze-compress was retained in the abdominal cavity for about seven years. In 1898 he was called to treat a woman for persistent median pyostercoral fistula secondary to several laparotomies. The patient had undergone operation for two extra-uterine gestations. Hemorrhage after the second had made tamponade necessary. This was in June, 1891. An eventration occurred at the scar which made another interference necessary on account of symptoms of intestinal obstruction. It was after freeing an adherent cyst by exposing the sigmoid colon that the fistula was present. On the first of June, 1898, the operation to close this sinus was done in the midline, which revealed the tract leading down to what appeared to be a new growth of the intestine, with the peculiarity of seeming to contain soft pasty matter within a thin wall. Consequently the diagnosis of a foreign body within the gut was suggested. When the intestine was opened and the adjoining mass also, the contents were found to be a large piece of ordinary surgical gauze about fifty-two centimeters on each side. The intestinal wound was sutured, the fistula excised, the abdominal cavity drained, and the parieties closed. Recovery followed. Pilate published in 1892 a case similar to the foregoing in which the gauze was passed by the rectum. This same thing might have happened in Chaput's case, but not without causing obstruction, as the compress was so large. It might also have found its way back into the peritoneal cavity; but it could scarcely have migrated out of the fistula, because the orifice was minute. Michaux in 1892 also reported the ulceration of a piece of gauze into the intestine, which there caused such changes that the gut had to be resected. Finally Jalaguier and Mauclaire have shown that the migration of gauze in the peritoneal cavity of certain animals is possible.

PEYROT published for Pauchet (Amiens) two procedures for the successful treatment of intestinal fistulæ. In the first patient the sinus entered a firmly adherent loop of the small intestine which could not be freed. The sinus was sewn into the neighboring intestine, so as to form an anastomosis. The cure was rapid. Similarly in another patient a fistula entered the large intestine between two loops of densely adherent small gut, all too much glued together to permit of separation. The fistula was simply buried in an anastomosis between the two loops of small intestine and thus well cured.

DELBET said in the discussion that the first case could have been more easily cured by stitching the fistula against the neighboring loop. Thus adhesions would close it, without the dangers and trouble of an actual anastomosis. Tuffier said that minor measures rarely cure these fistulæ. Hence he always tears down widely the adhesions so as to expose freely the sinus for whatever treatment it may then need. Michaux said that after thus exposing the tract simple suture is the usual treatment.

WALTHER communicated the results of his experiments with the method of Chaput-Prevost (Rio-de-Janeiro) for checking hemorrhage from the cut surface of the liver, employed by him in separating the xiphopagus monster recently reported to the Académie de Médecine. The pro-

cedure consists of a large loop of silk, taking in all the abdominal wall, another linked to that and embracing the liver substance, and a third through the opposite lip of the abdominal wound. Thus a chain suture and ligature combined are formed, which will stay in position and be efficacious in its hemostasis. Before attempting the separation of the monster he established the efficacy of this technic with animals. Walther adds that a compress of gauze held *in situ* by the middle loop upon the liver substance is an additional means of stopping the oozing.

TUFFIER briefly reported for Le Toux (Vannes) a case of violent intra-abdominal hemorrhage from the ovary. The case was under his care within twenty-four hours and at the laparotomy he found the right ovary badly lacerated. He therefore ablated it with the tube of that side. Examination showed that the bleeding was due to the laceration of a follicular cyst, rather than of an ectopic ovarian pregnancy, as the latter are very rare if, indeed, they occur at all. Delbet said that these intraperitoneal hemorrhages do not by any means indicate ectopic gestation. He had seen one due to the rupture of a hematoma in the broad ligament originating in one of the veins of that structure.

ROUTIER, at the meeting of December 19th, contributed notes on two cases of pyloric obstruction, submitted by Lafourcade (Bayonne). The first patient was a female, forty-three years old, long afflicted with the symptoms of the stenosis. Exploration revealed an epithelioma of the pylorus. Being unable to bring the cut ends of the stomach and duodenum together during the pylorectomy, he sewed each up and did a gastro-enterostomy supplemented by an entero-enterostomy. Recovery from the operation was complete and to-day, about three months thereafter, her general condition is very good. The other observation concerned a younger woman, apparently afflicted with a contraction due to an old ulcer. The operation here was simply anastomosis so that the gastric functions could go on. It has succeeded admirably, a large increase in the weight having occurred. Routier felt that the operator would have been safer had he done a pylorectomy here also, because no one can tell how such a constriction will develop.

GUINARD, in discussing, said that during the last year he had a veritable surgical calamity in connection with gastric surgery. For three years his patient had suffered from gastric symptoms and, finally, submitted to operation. In the deep field there presented what appeared to be the stomach, with its pylorus much retracted. Therefore it was determined to do a pyloroplasty. Death supervened in two days. At the autopsy what appeared during the operation as the stomach proper was a large subcardiac dilatation and this led though a canal, eighteen centimeters long, to a prepyloric ectasis which had seemed to be the retracted pylorus itself. If he had contented himself with a gastro-enterostomy, probably the patient would have survived.

POIRIER stated that on the morning of the meeting he had explored for pyloric disease and disclosed a kind of circular constriction apparently due to a localized peripyloritis. It was possible to so divide the adhesions as to restore the normal lumen. The case was mentioned merely to prove the difficulty of clinical diagnosis of such cases.

TUFFIER added that diagnosis is often exceedingly difficult not only before and after, but also during operation. A year ago he operated for what appeared, clinically and in the operative field, as an ulcer, but the patient has since died of cancer. In this case he did a gastro-enterostomy. In another patient of Hayhan with anemia and with gastric symptoms, according to a careful blood examination, he explored and found an extensive growth of the posterior gastric wall. A gastrectomy was done. Recovery has since been complete. Hartmann said that one cannot too minutely repeat various clinical examinations and tests for a differentiation between cancer and ulcer. Clinical considerations, chemistry of the gastric juice and the morphology of the blood are all necessary. The blood is especially important, because in cancer its features are so distinctive. Delbet reported the successful pylorectomy for a suspicious nodule of cancerous substance with adjoining inflammation. He has recently had two deaths. In one patient a round ulcer of the duodenum near the pylorus had caused grave hematemesis, which did not cease after a gastro-enterostomy and finally exhausted the patient. The second man had pyloric stenosis. After a successful posterior gastro-enterostomy signs of the *circulus viciosus* appeared. A secondary entero-enterostomy failed to check them.

LEJARS, at the meeting of December 26th, in behalf of Legueu reported two examples of intestinal perforation in the course of enteric fever. The first was in a ten-year-old boy two hours after the signs of perforation and under unfavorable systemic conditions was soon fatal. The second individual was fifteen years old and survived. The ulcers were simply sutured. With the fifteen successful cases of surgical intervention for this accident, recently collected and reported by Loison, there is a total of sixteen alive. Lejars himself had a fatality a short time ago. A student had unfortunately infected himself in the laboratory and had run an unfavorable course. The symptoms of perforation had been long present and the general condition lamentable before he was summoned and determined to take the only chance and operate. An ulcer which had eaten through the small intestine three centimeters from the cecum was found and sutured, and the general peritonitis was handled by copious, repeated hot flushings. Saline infusion braced the patient materially, and at first it was hoped that success would eventuate, but at evening he died. It is likely that

earlier operation would have cured. Rochard said he also lost three persons by being summoned too late and induced to operate. On a fourth case for Debove he operated on the diagnosis of perforation, but found none. Cure followed rapidly. Another patient with so-called appendicitis had typhoid lesions, but soon recovered after the operation. Such tend to show that interference is not fatal in enteritis.

WALTHER stated that within a year he was called to see a patient about twenty-four hours after the symptoms of perforation began. The signs were entirely localized and the general prostration very great. Hence he did not operate. In a few days the urine showed the establishment of an intestinovesical fistula. Spontaneous cure of this occurred in fifteen days and full recovery later. Three times during last year he has also seen patients with typhoid fever closely simulating appendicitis.

ROUTIER has observed clinical differences between perforations during the course and at the end of a typhoid fever. The former are usually deadly; the latter are apt to be less so.

HARTMANN alluded to his statement at the last meeting to the effect that in the cancerous patients the blood shows diagnostic features, especially anemia and certain forms of leucocytosis. He exposed an entirely healthy stomach recently in a woman who gave all the clinical signs of cancer of the stomach, but whose blood lacked these features. She recovered perfectly from the operation, but the issue made him wish he had heeded the condition of the blood and not interfered. Another observation concerned a gastro-enterostomy on a man for what appeared to be certainly an ulcer. The blood, however, indicated that probably a cancer was present, and this was confirmed at the laparotomy. Routier mentioned the fact, in discussing this topic, that he had recently been consulted about a woman with evidently all the typical symptoms of Reichmann's disease. His own examination was hasty, but appeared to confirm this diagnosis. On the operating table a double ovarian cyst was discovered and ablated. Such are the intricacies of diagnosis.

VAQUEZ, at the Société Médicale des Hopitaux de Paris, December 14th, related the features of a recent case of distinct general adenopathy of the cervical, inguinal, mediastinal and other regions, with marked leucocytosis. There were about sixty red cells to one white and the number of polynuclear neutrophile cells was augmented to about 90 per cent. The patient had been under observation for several months and the disease had very slowly increased. Meanwhile a moderate pleurisy with effusion had occurred and the transudate showed a very large quantity of the same polynuclear neutrophile cells, although otherwise clear and healthy. A similar phenomenon was extant in the saliva and urine. The liver and spleen showed no changes. Medication with arsenic and iodine availed nothing. Several injections of leucolytic serum, as prepared by Besredka, were also futile as to any influence upon either the systemic symptoms or the blood-count. The examination of one of the glands removed during life showed a most interesting atypical adenopathy, of the kind described alike by the collaborators, Bezanzon and Griffon, also by Widal and Lesné. The most important and instructive feature was the fact that the gland was filled with polynuclear neutrophile cells, seemingly identical with those circulating in the blood. There seemed to be no other cells whatever in the medulla of the nodes. In fact, the blood never contained any, but the normal elements and the ganglion showed no mycloid degeneration. The presence of an excess of the polynuclear cells in the blood, their appearance in the various body fluids, their infiltration of the lymph-node show that the case was one of common leucocytosis and make it among those of a true infectious polynucleosis and deserving of a place among the symptomatic leucocytosis and as true leucemia.

LAMY related the observation of a case of cerebral syphilis which gave the following premonitory signs. The woman was twenty-six years old and suffered from a migraine accompanied by a weakness of the upper eyelid. Very soon the migraine was transformed into a chronic cephalalgia with nocturnal exacerbations and the ptosis, at first slight and temporary, became distinct and permanent. In addition she began to show lapses of memory and general intellectual depreciation. The signs were regarded as pointing to a lesion of the base of the skull. Permanent and complete cure supervened upon the vigorous administration of antisyphilitic medication, hence the nature and site of the lesion could never be fully demonstrated. For the explanation of the iniatory and temporary symptoms it seems most rational to hypothecate a localized and temporary contraction of the arteries or some equivalent cerebral circulatory phenomenon. The point worthy of memory is that migraine with ptosis may be an early sign of a cerebral syphilitic deposit.

BARIE, at the next meeting, December 21st, in elucidating the relation between ischiorectal fistulas and the early tuberculosis, said that the number of cases in which this affection precedes the pulmonary lesions is really quite rare. In his own researches he has found only five patients in whom the sinus of the rectum beyond all doubt anticipated tubercle of the lungs by a variable extended time. One of these was a woman, which is remarkable because statistics in literature show that among males 5.3 per cent. and among females only 2 per cent. show this phenomenon. In three of his five patients the ischiorectal abscess was of spontaneous origin like the rule, and in two it seemed due to trauma. The intervals after which the lung trouble began were for the first series four, three, and one and a half years and for the second series two and one and a half years.

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**Health Board Bill Passed.**—The Senate last Thursday passed the bill abolishing the present State Board of Health and establishing a single-headed Commission, in accordance with the ideas set forth in Gov. Odell's message.

## SOCIETY PROCEEDINGS

### THIRD PAN-AMERICAN MEDICAL CONGRESS.

*Held at Havana, Cuba, February 4-7, 1901.*

GENERAL SESSION.

FIRST DAY—FEBRUARY 4TH.

THE Congress opened very brilliantly on Monday evening at the Tacon Theater with well-known representatives of Havana social and political life. About four hundred were in attendance, at least one hundred coming from the United States. The address of welcome was given by Governor General Wood. He alluded to the central position of the island of Cuba as affording a convenient meeting-place and welcomed the growing brotherhood that science welds for its votaries. He tendered to the visitors the freedom of the city.

**History of the Congress.**—This was the subject chosen by the Secretary-General, Dr. Coronado. It had been the intention of the authorities to hold the meeting at Caracas, but the political revolutions of Venezuela made it undesirable to do so and Havana was chosen. The presence of yellow fever almost prevented the holding of the meeting, but after many vexatious delays he was glad to welcome the visitors to Havana.

**Medical History of Cuba.**—The President of the Congress, Dr. Juan Santos Fernandez of Havana, chose this topic for his address. Cuba, he said, of all the Spanish dependencies was foremost in her study of the medical sciences. As early as 1546 a hospital had been erected in Cuba and, under the influence of the Dominicans, a medical faculty was added to the University which was founded in 1728. Yellow fever had always been uppermost in the minds of Cuban physicians and, late in the Eighteenth Century, Romay published quite exhaustively on the disease. He was evidently a progressive man, for he conducted a medical periodical, the first of its kind in Cuba, published many works on hygiene and was an ardent champion of vaccination, demonstrating on himself and his children the process of vaccination as early as 1804. Romay's work was taken up by Gutierrez, who founded the Havana Academy of Sciences, and was strenuous in his efforts to bring about decent sanitary conditions. At the present time the medical activity is marked; there are no less than a half a dozen periodicals, bearing on medicine and its cognate branches, and the work of others was eagerly sought and corroborated. Pasteur's work on rabies was alluded to as evidence of the wide-awake character of Cuba's pathologists and bacteriologists, for an institute for the treatment of hydrophobia was instituted in 1887, close on the heels of Pasteur's announcements. What Cuba's medical science had been in the past was but a faint glimmer of what its future would be. Freed from the yoke of the oppressor, the speaker prophesied a renaissance for Cuban medicine.

**Obstetrics in Cuba.**—Dr. E. Hernandez of Havana spoke of the advances made in this branch of medicine, laying particular stress on the part played by prominent Cuban physicians in the development of the specialty. He spoke of some of the causes of rigidity of the uterine cervix and of the value of symphyseotomy, in which branch Cuban medicine had much to be proud of. Special modifications of the Tarnier forceps were noted.

SECOND DAY—FEBRUARY 5TH.

**Medicine in Cuba.**—This was the opening paper of the evening session, held in the Marti Theater, by the Vice-President, Dr. G. Lopez of Havana. Cuban medicine had been hampered by the climatic conditions on the island. This made it difficult for its medical men to meet and compare notes. The successful gathering of 1890, however, had been of especial value in bringing together those from over the entire island and had given an impetus to scientific work which was making itself felt at home and abroad. Bacteriology had always had special attractions, as the infectious diseases were prevalent. Of late years much interest had been taken in the study of the medicinal plants of the island and they promised to offer an attractive field for pharmacological research.

**Yellow-Fever Problems.**—The most important problem for the southern countries is this one of yellow fever, said Dr. Eduardo Wilde, Minister to the United States from the Argentine Republic. Sanitation was, in his opinion, the most important factor in the problem and he urged that the Pan-American Medical Congress take upon itself the important mission of attending to this matter as an exclusive problem, if necessary. He did not seem to think that the etiologic factor was definitely known, but said that if concerted efforts were made to stamp out endemic foci, and if the various shipping ports were subjected to active and radical sanitary improvements, much could be accomplished. Money spent, even in large amounts, would give good returns, when viewed from a broad economic standpoint.

Among many other interesting remarks, he described the present high sanitary condition of that city, the great reduction in mortality and in the number of cases of contagious and infectious diseases. For the eradication of yellow fever from America, he proposed the following resolution:

To the Third Pan-American Medical Congress: First, To assemble a Congress of American International Hygiene which shall be composed of delegates from all the American governments which accept the proposed congress, whose mission shall be to establish a basis for a general international treaty, whose object shall be to formulate such laws as are necessary to eradicate yellow fever from its endemic foci or where it has developed by importation, etc.

Second, To authorize the President of the third Pan-American Congress to address the respective governments of the American countries begging their acceptance of this congress and the appointment of their respective governments.

**Tuberculosis and Its Prevention.**—Dr. Eduardo Liceágo of Mexico had prepared a paper on this subject. The problem in Mexico was essentially the same as that everywhere else, but the theory of its contagiousness was a difficult doctrine to inculcate in the minds of the native population. For them, it seemed that large organizations, similar to the Red Cross Society, would be helpful in teaching the people of the infectiousness of the sputum, the feces, the urine and other discharges. The missions could also do good work in disseminating knowledge of the means by which early diagnosis, disinfection and isolation could be carried out. Compulsory notification was also advocated by him.

**Medical Science: A Retrospect.**—Dr. Luis H. Debayle, delegate from Nicaragua and Honduras, gave a brief resumé of Eighteenth Century medicine and then gave a running account of the important landmarks that have stood out in the development of medicine in the past one hundred years. Pinel, Laennec, Trousseau and Bichat were alluded to as pioneers in their respective fields, each pointing the way to more exact interpretations of morbid phenomena. The science of chemistry he believed would point the way to many truths of practical importance and would ultimately be the last resort in the analysis of the more modern methods of serumtherapy. The newer instruments of precision were also discussed by the writer in their relation to more exact diagnosis.

The author spoke with special pride of the work of Ramon y Cajal, as a Spaniard whose investigations, with those of Golgi and Källiker, have revolutionized the knowledge of the anatomy and histology of the nervous system and have made possible the interpretation of morbid nervous conditions hitherto clouded in obscurity. The discovery of Morton, and Lister's application of Pasteur's teachings have been the signal epoch-making discoveries in the surgical field. The modern science of bacteriology is but an infant in arms and the secrets of serum therapy are still unborn, but are destined probably to be among the brightest discoveries of the new century.

### THIRD DAY—FEBRUARY 6TH.

The Secretary, Dr. Acosta, rendered his report. Among other items he gave the attendance of this and of the two previous Congresses:

First, 1893, 1,040, Washington.
Second, 1896, 440, Mexico.
Third, 1900, 375, Havana.

The next meeting of the Pan-American Medical Congress will be held in the city Buenos Ayres, Argentine Republic, in 1903.

Drs. Roland G. Curtin and Hudson Makuen of Philadelphia, Committee, drew up and read the following resolutions on the late Prof. Wm. Pepper of Philadelphia.

"It is with unfeigned sorrow that we mourn the untimely death of our honored President, Dr. William Pepper, who organized the Pan-American Medical Congress and so ably and successfully presided over the two first meetings. To his wise supervision is due much of the success of the Congress since its inception. At this time we especially feel the loss of his guiding hand and executive ability to help us in achieving still greater success. In our grief we are not alone, for many and varied enterprises are hampered by the absence of his painstaking care; among the more prominent may be mentioned the Congress of American Physicians, the University of Pennsylvania, the Commercial Museums (a great and original conception of his own), and the Archeological Museum of Philadelphia. Let his example of untiring industry and the memory of his useful life spur us on to carry out the important work planned by our beloved President, Dr. William Pepper. May the crown of glory which he richly deserved be his is the prayer of his associates of the Pan-American Medical Congress."

**International Responsibilities, Sanitation and Progress.**—Dr. Walter Wyman, Surgeon-General of the United States Marine Hospital Service, read this paper. If there are several specifics for various diseases such, as smallpox, plague, diphtheria, etc., why do they persist? Because sanitary application has not kept pace with sanitary knowledge. The pride of municipalities should consist in perfect sewerage, paving, light, and ventilation in its houses—slums should not exist; the death-rate in them is 50 to 150 per cent. greater than in the better parts of a city and the average length of life shortened by at least ten years. Good sanitary surroundings are the best methods to get rid of disease. Professional sanitarians should be a class of men well versed in law—the average doctor makes a poor legislator. A good lawyer would make a better health officer than the average doctor. The future sanitary legislation should be toward improving the dwellings of the poor, reclaiming slums and rookeries. There are 44,000 tenement-houses in New York and 2,000 are being added every year. He cited the great reformatory experiment being carried out in London, involving an annual expenditure of $10,000,000 and affecting 40,000 people. He advises that the health officer of a city should never be a political appointment. Municipal cleaning and sanitation are not a field for National Government. The sanitation of sea-port cities by the Federal Government is now being considered. International agreement upon the eradication of yellow fever from this hemisphere is a good idea, but it would be difficult to establish it. The city of Santiago de Cuba, formerly a pest-hole of yellow fever, has now been free from the disease for more than a year. This is a good example of what sanitation may accomplish. In Havana the average mortality

for nine previous years has been 46.71 per thousand; in 1900 it was 24.40 per thousand. Four requisites are necessary to accomplish these results: (1) Effective sanitary administration; (2) good sewerage and drainage; (3) sanitation of harbor; (4) disinfection of infected houses or their destruction.

A short address was delivered by a Mexican representative, who proposed an international congress for the suppression of alcoholism.

## SECTION ON GENERAL MEDICINE.

### FIRST DAY—FEBRUARY 4TH.

**Propagation of Yellow Fever.**—The session was opened by Dr. Carlos A. Finlay, President of the Section, who read a paper on this subject. In 1812, he said, Dr. Colomar, describing the epidemic in Murcia, suggested the contagious character of this disease and appreciated many of the natural influences which limit the communicability of it. Dr. Barton (1853) found that a temperature below 60° F., or above 90° F. was very unfavorable to propagation and Dr. Pennell showed that a number of patients moved to an altitude of 3,000 feet in no instance communicated the disease. The steamship "Plymouth" investigation in 1880 led Dr. Bemiss to report that the poison of yellow fever "is reproduced chiefly, if not wholly, within the body of the patient, but undergoes some change after its escape from the body, which increases its toxic qualities." Dr. Finlay expressed the opinion in 1881 that three conditions were necessary to the spread of the disease: (1) A previous case of yellow fever; (2) a person susceptible to the disease; (3) "the presence of an agent entirely independent for its existence of the diseased, but which is necessary in order that the disease may be conveyed from the patient to a healthy individual." He suspected the *Culex* mosquito and experiments at once justified his suspicions. He inoculated twenty soldiers by allowing the mosquito to feed upon undoubted cases of yellow fever and within two or three days permitting it to sting one of the soldiers. In nearly every instance a mild form of the disease appeared within four or five days, and the patients subsequently remained free from contagion although they had lately arrived in the infected country and were not immune. Recently the achievements of Drs. Reed, Carroll and Agramonte, with more approved and scientifically-accurate methods, have proven that the *Culex* mosquito is undoubtedly the means of communicating this virulent disease.

**Prolonged Fevers of Nicaragua.**—Dr. Louis H. Debayle of Nicaragua read an interesting paper in which he went over the etiology, diagnosis and treatment of these conditions. He stated that the principal characteristics of these fevers are that they are continuous, with variable remissions from time to time; that they are not typhoid in character, and that they are prolonged for weeks and months; that they rarely present renal, nervous or cardiac complications, and that they are nearly always accompanied by persistent constipation and loss of appetite, that they are very slightly influenced by quinine and antipyretics in general; that in the blood the hematozoan of Laveran is always found in one form or another. He then went on to analyze the variations in the temperature, the character of the pulse, and the condition of the various other organs during this prolonged fever. As it is rarely accompanied by death, he had not had the opportunity to make postmortem examinations. The diagnosis was at first extremely difficult, but it was necessary to differentiate it from various prolonged fevers, typhoid, bilious remittent fever, typhomalarial fever and Malta fever. With this latter it had many points of similarity, but he did not believe that the cases he had seen could come under this category. It is true that these fevers are common in malarial regions and where typhoid is rare, but he did not believe they were cases of chronic malaria, that the presence of the Laveran organism was only evidence of a double infection. In the treatment of these fevers antipyretics are of little avail, much less so quinine, given even hypodermically or in large doses. The use of intestinal antiseptics and tonics had given him the best results. His conclusions were that this was a distinct fever, different from typhoid, bilious, remittent or other acute forms of fever. Dr. Duplan of Mexico claims to have observed the same form of fever in Tierres Callintes as described by Dr. Debayle, and he is glad to note that other observers in another country have had the same experiences.

Dr. Martinez of Havana remarked that the fevers described by Dr. Debayle are similar to what is called in Cuba enterosepsia, and in his opinion are nothing more than cases of Malta fever; and that some of these cases described by Dr. Debayle are light cases of malarial fever, with an added infection of Malta fever. He claims to have seen such cases in Havana.

Dr. Coronado believes that these fevers, as described by Dr. Debayle, are nothing more than prolonged remittent malarial fevers.

Dr. Caluck, who has practised for twenty years in Costa Rica, has observed the same forms of fever in his practice. He believes that this prolonged fever exists from Mexico to Panama.

Dr. Perna of Cienfuegos believes that these fevers are not alone found in the tropics, but that he remembers a description of a fever by Dr. Robert of Barcelona similar to this, and designated by him as simple infectious fever. He does not believe that they are paludic or malarial, on account of their benignancy and because of the fact that they are not influenced by quinine.

Dr. Fernandez of Puerto Rico stated that he practises in a region where malaria is unknown,

and that he has had occasion to observe many cases of this fever.

Dr. Guiteras said that he believes he was the first to publish observations of this form of fever in the annals of the Marine Hospital Service in the United States in the year of 1881. He described it under the name of continuous thermic fever. He believed it was due to the disarrangement of the thermic centers, but abandoned this theory when he noticed in Key West that this fever was transmissible; he then believed that it was an infectious fever. He has never found the hematozoan in the blood, and lately he is inclined to believe that they are cases of Malta fever, as he saw a case recently in Philadelphia in an officer who had returned from Puerto Rico. In regard to secondary infections, a term so commonly used in this country, he does not believe that they are brought about by coli bacillus, as this is a pyogenic organism, and the formation of abscesses is very rare in these cases.

Dr. Garcia of Havana has seen many similar cases in the "Quinta de Dependientes," and has never been able to demonstrate the present of the hematozoan in the blood. They never respond to quinine or intestinal antiseptics.

In closing the discussion, Dr. Debayle said that he believed at first that these fevers were typhoid; in other cases that they were tuberculosis; in others that it might be probably cases of Malta fever. But he is convinced that Malta fever, with its typical remission in the 21st day, exists in Nicaragua, while in the cases he had just described, the temperature is never remittent or reduced to normal. The symptoms are distinct from those of Malta fever. He intends to make new investigations in regard to this fever on his return to Nicaragua.

**Borras Fever.**—Dr. Luis Perna of Cienfuegos read a paper on this subject. This disease is a very grave fever. It usually attacks children, but sometimes the aged. It is characterized by black vomit, in small quantity, or very abundant, which may come on immediately following the initial fever, or several days after. Very rarely is it accompanied by albumin, and never by epistaxis, melena, hiccough or icteric discoloration; it may attack the same person more than once; both whites and negroes are susceptible; it is malarial in origin, and consequently its rational treatment is quinine. Analysis of the blood has always demonstrated the presence of the malarial parasite. It is different from yellow fever in that it is not contagious and not accompanied by albumin, hiccoughs, epistaxis nor icteric discoloration.

Dr. Edelman is of the opinion that borras fever is a syndrome and not a pathological entity. He has seen cases which were clearly those of yellow fever and others which were undoubtedly cases of malaria. He has never observed cases due to typhoid fever nor profound lesions of the gastro-intestinal tract.

Dr. San Martin does not believe that borras fever is a pathological entity, but a symptom which may present itself in other fevers as in yellow fever or malaria.

Dr. Dueñas did not discuss what borras fever is, but later on will take up this subject in a paper which he is to read on the diagnosis of yellow fever in the native Cuban. But he referred to the fact that Kelock, Kierner and Loupy have described the severe hemorrhages from the mouth which take place in the hemoglobinuric bilious fever.

Dr. Moreno does not believe that borras fever is a paludic fever. He believes that it is a form of yellow fever in natives.

From the results of these discussions it was evident that the same difference of opinion exists now in regard to the duality of yellow fever and borras fever. Many native physicians are of the opinion that it is a peculiar fever which attacks children; others, that it is a form of malaria; still others that it is a symptom of various conditions; while the majority believe that borras fever is yellow fever in the native.

**Etiology of Yellow Fever.**—This was the title of a paper by Drs. Walter Reed, James Carroll and Aristedes Agramonte, Acting Assistant Surgeons, U. S. Army. In a preliminary paper read before the American Public Health Association, at its meeting at Indianapolis, Ind., October 22-26, 1900, the authors arrived at the conclusion, based on observations made by them that the mosquito was the intermediate host for the parasite of yellow fever. In this additional note they presented the results of their further investigations on this important subject, which have been continued at an experimental sanitary station (Camp Lazear) near the town of Quemados, Cuba. At this station, in strict quarantine, and with every source of infection absolutely excluded, they succeeded in infecting 85.71 of those individuals who have been bitten by purposely-contaminated mosquitoes (*Culex fasciatus*. Their observations do not conform with the opinion that mosquitoes carry the specific agent in their proboscis, and simply transfer it from one individual to another in a mechanical way, but appear to demonstrate that the parasite of this disease must undergo a definite cycle of development in the body of the mosquito before the latter is capable of conveying infection. This period would seem to be not less than twelve days. The question of house infection is also considered, and it is shown that this infection is due to the presence of mosquitoes that have previously bitten patients suffering from yellow fever; and that the danger of contracting the disease may be avoided in the case of non-immune individuals who sleep in this building by the use of a wire screen. It was also demonstrated by observations made at this camp that clothing and bedding contaminated by contact with yellow-fever cases, or by the excreta of these patients, are absolutely without effect in conveying this disease. The following conclusions were reached: (1) The mosquito (*Culex fasciatus*) serves as an intermediate host for the parasite of yellow fever. (2) Yellow fever is transmitted to the non-immune individual by a mosquito that has previously fed on the blood of those ill with this disease. (3) An interval of about twelve days or more after contamination appears

to be necessary before the mosquito is capable of conveying the infection. (4) The bite of the mosquito at any earlier period after contamination does not appear to confer any immunity against subsequent attacks. (5) Yellow fever can also be experimentally produced by subcutaneous injection of blood taken from the general circulation during the first and second day of this disease. (6) An attack of yellow fever, produced by the bite of the mosquito, confers immunity against a subsequent injection of the blood of an individual suffering from the unexperimental form of this disease. (7) The period of incubation in thirteen cases of yellow fever averaged from forty-one hours to five days and seventeen hours. (8) Yellow fever is not conveyed by fomites and, hence, disinfection of articles of clothing, bedding and merchandise, supposedly contaminated by contact with those ill with this disease, is unnecessary. (9) A house may be said to be infected with yellow fever only when there are present within its walls contaminated mosquitoes, capable of conveying the parasite of this disease. (10) The spread of yellow fever can be most effectually controlled by measures directed to the destruction of mosquitoes, and the protection of the sick against the bite of these insects. (11) While the mode of propagation of yellow fever has now been definitely determined, the specific cause of this disease remains to be discovered.

The discussion was opened by Dr. Perna who said that it is sophism to believe that *post hoc, ergo propter hoc*, that is to say, as Carmona, Freyre, Sanarelli and others have fallen to this error, one must not be too precipitate in accepting the result of statistics. He stated that the studies made of mosquitoes are very old, and that a French doctor, who died about the year of 1850, expressed the opinion that malaria, yellow fever and cholera were propagated by mosquitoes. Dr. Perna also criticised the methods employed by the Commission in making experiments on human beings and stated that he is entirely opposed to such experiments.

Dr. San Martin defended eloquently and with strong arguments the high scientific standard of the experiments as carried out by this Commission, and also brought out the point that it was not statistics, but facts that this Commission presented.

Dr. Holbeck was particularly interested in the paper and expressed his opinion that the problem of 200 years was about to be solved and that the old quarantine regulations should be greatly modified. He also described the existence of a pine belt within a short distance of Charleston, S. C., in which yellow fever never developed as an epidemic; although patients ill with the disease would go there during the existence of epidemic in Charleston and would die from the disease, it would not spread. Mosquitoes are not known in that region, and probably this is the true explanation of the above fact. He concluded by emphasizing the inestimable value of these experiments if they proved to be true.

Dr. Martinez supported Dr. San Martin's views. He took up the moral question and claimed that without these experiments the truth could not have been discovered.

Dr. Guiteras who, up to within a short time had been adverse to the theory of the transmission of this disease by mosquitoes, now accepted as incontrovertible the results of the experiments of the Commission. He followed with interest many of the experiments, and as a member of the Commission saw most of these cases, which he had no hesitation in pronouncing typical cases of yellow fever. A fact which impressed him forcibly was the absolute control of the epidemic by Dr. Reed. The cases would develop or not as he wished. He does not think that the mosquito should be called the *Culex fasciatus*. Giles' description of the *Culex tiniads* mosquito agrees more closely than with the *Culex fasciatus*. He describes the difference between them. He is inclined to consider them a genus apart, because they lay eggs different from the other form of *Culex*.

Dr. Finley stated his admiration for the work of the Commission. He said that he believes that this session of the Congress will go down in history as of great importance. He believes that the differences between his opinion and that held by the Commission will disappear in the course of time. He states that they were based upon the fact that he investigated with three varieties of mosquitoes, while the Commission has been restricted to one variety; that the Board was placed upon better footing for obtaining satisfactory results; that the negative result obtained by the inoculation of mosquitoes of short infection should not induce the Commission or the Board to make such hard and biased rules as are evidenced in its conclusions.

In conclusion Dr. Reed said that he was profoundly impressed with the interest and attention given to these experiments. In regard to the moral aspect of the case, he did not think that any one appreciated the position in which he found himself nor the difficulties which beset his path. The first experiment was made on a member of the Board, Dr. Carroll. The senior member of the Board expected to take his bite in turn, but was unexpectedly called North. As no animal could be given the disease, and it was useless to follow the previous indefinite experiments, it was absolutely necessary to make these experiments on human subjects, or otherwise volumes could have been written and discussed and yet one would have been no nearer the truth than at first. No progress could have been made toward an exact knowledge of the disease unless human subjects were used. All experiments were performed upon persons who had given their free consent. In reference to the remarks of Dr. Holbeck of Charleston, he did not say that the disinfection of vessels should be dispensed with; but only referred to such articles as bedding and clothing. It is necessary to get rid of the mosquitoes, and this simplified the process of disinfection. In regard to the remarks of Dr. Guiteras in reference to the name of the mosquito, Dr. Howard of Baltimore told the speaker that *Culex fasciatus* is identical with *Culex tiniads* as described by Giles. Theobold separates *Culex tiniads* from the genus *Culex* and places it in a new genus, *Stegamina*. These lay their eggs in a peculiar way, and there is also a

difference in the anterior claws of the male insect from those of the other *Culex*. There is also a difference in the larva of the *Culex fasciatus*. It is very interesting also to note the fact that this is the very mosquito that Dr. Finley used in his experiments and that this particular mosquito does not belong to the genus *Culex*; therefore, malaria has a genus of its own, namely, *Anopheles*, and yellow fever, the genus *Stegamina*.

**Yellow Fever.**—At the afternoon session Dr. Pedro Albarran of Havana described an epidemic of yellow fever which occurred in San Diego del Valle, Province of Santa Clara, twenty years ago. Out of a population of 300 inhabitants, 61 were attacked and 48 died. The interesting point about this epidemic was that native Cubans, both blacks and whites, suffered most from the ravages of this disease. The disease was traced to a Spanish soldier who died in the outskirts of the town three days after his arrival. The Cuban who nursed and buried him developed the disease five days after. The epidemic lasted all summer and cold weather stopped it. Only two cases occurred during the following spring.

At the Thursday morning session a paper on Prophylaxis in Yellow Fever was read by Dr. José A. Trémols of Havana.

Dr. Liston H. Montgomery of Chicago proposed a new office in the National Cabinet, namely, a Department of Health.

Dr. Ramon Guiteras read the paper of Dr. Alvah H. Doty, Health Officer of the Port of New York, entitled The Necessity for a More Careful Investigation as to the Cause of Outbreaks of Infectious Diseases. The promptness with which an outbreak of infectious disease is brought under control or suppressed depends principally upon our knowledge of the means by which it is transmitted. The doctor emphasized the fact that, whereas the laity and many of the medical profession believe that the clothing actually worn by *well* persons is a usual medium of infection, careful investigation shows that this occurs only in rare instances. Experience teaches that it is the mild, ambulant or convalescent cases which are unrecognized as the carriers of infection. He cited the recent epidemic of smallpox in New York City, and referred to the numerous mild ambulatory cases. Mild or ambulatory cases of infectious and contagious diseases constitute a greater menace to the public health than those well marked, inasmuch as they frequently are not recognized or looked for. Another fact to be borne in mind is that infectious diseases are generally contracted by being in contact with cases of a like character. His conclusions are as follows: He is satisfied that the clothing of well persons and the cargoes of ships are rarely the means of transmitting disease. . . . It is the mild, ambulant or convalescent cases which pass unrecognized, "but this does not imply that we should relax our efforts to protect the public health, but should bring about a more careful and thorough investigation as to the means of transmission of infection."

Dr. Moreno of Havana thinks that the subject is important and believes that more attention should be directed to the cases of relapse in yellow fever which may occur after fifteen days. When they occur the cause is attributed to infected objects. Diphtheria he believes can be transmitted by the clothing of healthy persons.

Dr. John Guiteras said he considered Dr. Doty's paper as the first plausible expression of modern quarantine ideas. Since 1881 he has always said that the first case of yellow fever reported is not the first case of the epidemic. He has demonstrated not only previous mild cases but evidences of fatal cases occurring before the first recorded case. The importance of mild cases in connection with yellow fever is great and the negro is often sick and the disease unrecognized. One of the sources here is the native-born child. Scarlet fever is especially difficult to recognize in negroes. One epidemic in Savannah was due to mild cases in negroes. He congratulated Dr. Doty on the excellence of his paper.

Dr. Marcour requested information as to life of mosquitoes. Dr. Agramonte stated that mosquitoes hibernate and live from fall to spring. Dr. Porter of Florida cited a case in which eleven out of a crew of fourteen died of yellow fever before reaching Rio. The captain stated that no mosquitoes were on board. The question brought up by Dr. Doty is not *new*. It has long been believed that sunlight and air are Nature's disinfectants.

Dr. D. T. Lainé of Havana does not think that much stress should be laid upon the observation of physicians when made so long ago as twenty years, as in the case cited by Dr. Porter. Not long since in company with Dr. Guiteras he went on board the "Mexico," then lying in the Bay of Havana. The captain and crew assured them that there were no mosquitoes on board and yet they found several dozen in different staterooms. Mistakes in the diagnosis of cases are frequent.

Dr. Halbech of Charleston believes that the whole history of yellow fever is to be rewritten and recommends each one present to use his good offices on his own government toward having this commission appointed.

**Madura Foot.**—Drs. A. Diaz Albertini and C. M. Desvenine of Havana reported two cases. One of the cases was shown and the amputated foot of the other case. A description was given of the parasite found in the granules, *Streptotris Madurae*, and microscopic preparations were shown.

Dr. Calmech of Costa Rica has seen many cases in Costa Rica where it is confounded with elephantiasis. He believes the disease can be cured in the beginning when the nodules are small. He claims that elephantiasis is rare, but the Madura foot very common.

Dr. Debayle of Nicaragua has seen many cases in his practice. Dr. Moreno does not think that the absence of filaria in a suspicious case should prove the absence of elephantiasis.

*(To be continued.)*

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